INITIAL STATEMENT OF REASONS
FOR
PROPOSED BUILDING STANDARDS
OF THE
DIVISION OF THE STATE ARCHITECT - STRUCTURAL SAFETY (DSA-SS)

REGARDING THE 2007 CALIFORNIA BUILDING CODE
CALIFORNIA CODE OF REGULATIONS, TITLE 24, PART 2

The Administrative Procedure Act (APA) requires that an Initial Statement of Reasons be available to the public upon request when a rulemaking action is being undertaken. The following information required by the APA pertains to this particular rulemaking action:

STATEMENT OF SPECIFIC PURPOSE AND RATIONALE:

(Government Code Section 11346.2 requires a statement of specific purpose of each adoption, amendments, or repeal and the rational determination by the agency that each adoption, amendment, or repeal is reasonably necessary to carryout the purpose for which it is proposed.

- When repealing adopted California original standards, summarize the effect of the standards and explain why the standard is no longer necessary
- When amending a standard, explain the standard proposed to be modified, explain the effect of the proposed modification, explain the inadequacy of the standards being modified, and explain why the proposed amendment is necessary)

The general purpose of this proposed action is principally intended to update and codify a new edition of the California Building Code (California Code of Regulations, Title 24, Part 2) based upon a more current edition of a model code. The current California Building Code (CBC) in effect is the 2001edition California Building Code, which is based upon the 1997 edition *Uniform Building Code* (UBC) of the International Conference of Building Officials.

This proposed action:

- Repeals the 1997 edition *Uniform Building Code* of the International Conference of Building Officials and incorporates and adopts in its place the 2006 edition *International Building Code* (IBC) of the International Code Council for application and effectiveness as the 2007 California Building Code, pursuant to Health and Safety Code Section 18928. Health and Safety Code Section 18928 requires any state agency adopting model codes to adopt the most recent edition.
- Repeal DSA-SS amendments contained in the 2001 edition California Building Coce (based on the 1997 edition UBC) that are not sufficiently addressed by the new model code or are no longer necessary nor justified pursuant with Health and Safety Code 18930 (a) (7).
- Adopt and implement additional necessary amendments to the 2006 edition IBC that address specific requirements of California laws and regulations applicable to DSA-SS jurisidiction.
- Codify non-substantive editorial and formatting amendments from the format based upon the 1997 UBC to the format of the 2006 IBC.

Overview of Proposed Changes to Title 24, Part 2 by DSA-SS

DSA-SS's proposed adoption of model building code provisions and amendments are applicable to public elementary and secondary schools, community colleges, and state essential services facilities.

The scope of this proposal can be categorized into three parts:

1. Adoption of model building code (International Building Code) non-structural chapters without amendment by DSA-SS, which includes chapters 2 through 10, 12, 26, 30, 31, and 32.

The non-structural chapters that are not proposed for adoption (e.g. 11, 13, 27, 28, 29) are substantially modified by other state agencies. The purpose of this proposed adoption is to clarify the applicability of comprehensive model building code provisions for DSA-SS regulated occupancies.

2. Adoption of structural safety amendments and model building code provisions, which includes both the structural design chapters (16A, 17A, 18A, 19A, 20, 21A, 22A, 23), and non-structural chapters (14, 15, 24, 25, 33, 34, and 35.

The Division of the State Architect - Structural Safety (DSA-SS) and the Office of Statewide Health Planning (OSHPD) have developed and coordinated a joint package of the Express Terms and Initial Statement of Reasons for the adoption of structural safety amendments and model code provisions.

Due to the quantity of amendments to model code chapters 16, 17, 18, 19, 21 and 22, it is proposed that the use of "A" versions of these chapters be continued, as has been done since the 1989 edition CBC. The quantity of amendments proposed for chapters 14, 23, and 25 have been sufficiently reduced from those in the 2001 CBC, that "A" versions of those chapters is not warranted.

3. Updating and relocation of seismic retrofit regulations contained in Division VI-R of Chapter 16A, 2001 CBC, into chapter 34 (Existing Buildings) of the 2007 CBC.

DSA-SS developed and coordinated these streamlining revisions with the Department of General Services, Building Standards Commission (BSC) staff, the University of California and California State University, Administrative Office of the Courts, and the Seismic Safety Commission staff. Refer to the separate code change proposal by the BSC and DSA for application to state-owned buildings.

The specific purpose and rationale of each adoption, amendment, or repeal is as follows:

Title 24 Part 2, Chapters 14, 15, 16A, 17A, 18A, 19A, 20, 21A, 22A, 23, 24, 25, 33, 34, 35, and Appendix J:

The Division of the State Architect (DSA-SS) adopts California Building Code (CBC) requirements for application to public elementary and secondary schools, community colleges, and state essential services facilities. The requirements governing the structural design and construction of DSA-SS regulated facilities are currently found in the structural chapters of the 2001 CBC. These chapters are based on the structural provisions of 1997 Uniform Building Code (UBC).

Pursuant to the direction of the California Building Standards Commission, the 2007 CBC shall be based on the 2006 IBC. This proposal represents DSA-SS's adoption of the 2006 IBC for incorporation into the 2007 triennial edition California Building Code. In addition, DSA-SS proposes the adoption of Chapters 16A, 17A, 18A, 19A, 21A, and 22A, based upon the 2006 IBC Chapters 16, 17, 18, 19, 21, and 22, with state amendments.

The specific purpose and rationale for the amendments in the 2007 CBC Chapter 14 provisions:

CHAPTER 14
EXTERIOR WALLS

REPEAL OF EXISTING CALIFORNIA AMENDMENTS IN PART OR IN WHOLE THAT ARE NO LONGER NECESSARY:

The 2006 IBC uses reference standard for design and materials requirements with amendments rather than incorporating them into the building codes as was done in the 2001 CBC, which is based on the 1997 UBC. Since two code cycles (2000 & 2003) have passed between the 1997 UBC and the 2006 IBC, some of the design concepts and philosophies contained in the 2001 CBC have become obsolete or irrelevant.

Amendments contained in the 2001 CBC are repealed except those shown in express terms. Where an entire amendment in a section or subsection is repealed they are shown as stricken through the section or subsection numbers. When amendments are carried forward the amended language is shown in the express terms and part of the text that is repealed is shown in strike-out. The first column of the adoption matrix shows which amendments are carried forward. The second column shows where the amendment has been relocated to (by section). Any modification to amendments being carried forward is indicated with the purpose and rationale stated.

Section 1405.1.1 – This reference is added to seismic design requirements in Section 1408 for proper use of the section.

Section 1405.10.4 – This section refers to the ICC Electrical Code for grounding of metal veneers. DSA is proposing to replace the reference to the ICC Electrical Code with the California Electrical Code. The amendment is necessary to ensure that the statutory code is properly referenced.

Section 1408.3 (Relocated from 1403A.4.1, 1403A.4.4, 1403A.5.3, 1403A.5.6 & 1405A.1, CBC 2001) – This section retains the requirements for adhered and anchored veneer design, testing and inspection from the 2001CBC,

Sections 1403A.4.1, 1403A.4.4, 1403A.5.3, 1403A.5.6 &1405A.1. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

The specific purpose and rationale for the amendments in 2007 CBC Chapter 15 provisions:

CHAPTER 15
ROOF ASSEMBLIES AND ROOFTOP STRUCTURES

REPEAL OF EXISTING CALIFORNIA AMENDMENTS IN PART OR IN WHOLE THAT ARE NO LONGER NECESSARY:

The 2006 IBC uses reference standard for design and materials requirements with amendments rather than incorporating them into the building codes as was done in the 2001 CBC, which is based on the 1997 UBC. Since two code cycles (2000 & 2003) have passed between the 1997 UBC and the 2006 IBC, some of the design concepts and philosophies contained in the 2001 CBC have become obsolete or irrelevant.

Amendments contained in the 2001 CBC are repealed except those shown in express terms. Where an entire amendment in a section or subsection is repealed they are shown as stricken through the section or subsection numbers. When amendments are carried forward the amended language is shown in the express terms and part of the text that is repealed is shown in strike-out. The first column of the adoption matrix shows which amendments are carried forward. The second column shows where the amendment has been relocated to (by section). Any modification to amendments being carried forward are indicated with the purpose and rationale stated.

Section 1503.4 – This section refers to the International Plumbing Code for roof drainage system design and installation. DSA is proposing to replace the reference to the International Plumbing Code with the California Plumbing Code. California Plumbing Code is proposed to be based upon the Uniform Plumbing Code, the amendment is necessary to ensure that the statutory code is properly referenced and to ensure changes to the Uniform Plumbing Code proposed by DSA are applied and enforced. Without this amendment, the non-amended International Plumbing Code would apply.

Section 1507.3.10 – The reference is added to seismic design requirements in Section 1511 for proper use of the section.

Section 1507.7.6 – The reference is added to seismic design requirements in Section 1511 for proper use of the section.

Section 1511 (Relocated from 1507.1.1, 1507.7.1 & 1507.11.1, CBC 2001): – This section retains the seismic design requirements for roof fasteners, wire and metal strip from Sections 1507.1.1, 1507.7.1 & 1507.11.1 of the 2001 CBC. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format. Also, an alternative design procedure is added to make the design more flexible.

The specific purpose and rationale for the amendments in 2007 CBC Chapters 16A provisions:

CHAPTER 16A
STRUCTURAL DESIGN

REPEAL OF EXISTING CALIFORNIA AMENDMENTS IN PART OR IN WHOLE THAT ARE NO LONGER NECESSARY:

The 2006 IBC uses reference standards for design and materials requirements with amendments rather than incorporating them into the building codes as was done in the 2001 CBC, which is based on the 1997 UBC. Since two code cycles (2000 & 2003) have passed between the 1997 UBC and the 2006 IBC, some of the design concepts and philosophies contained in the 2001 CBC have become obsolete or irrelevant. Repeal of California amendments for those sections where the 2001 CBC design concepts or philosophies become obsolete or irrelevant are not addressed explicitly.

Amendments contained in the 2001 CBC are repealed except those shown in express terms. Where an entire

amendment in a section or subsection is repealed they are shown as stricken through the section or subsection numbers. When amendments are carried forward the amended language are shown in the express terms and part of the text that is repealed are shown in strike-out. The first column of the adoption matrix shows which amendments are carried forward. The second column show where the amendment has been relocated to (by section). Any modification to amendments being carried forward are indicated and purpose and rationale stated. Amendments that are relocated from existing Chapter 16A to a chapter other than Chapter 16A are shown in the relocated Chapters.

Section 1601A.1 – This Chapter's scope is revised by adding Sections 1601A.1.1 and 1601A.1.2 to clarify application of Chapter 16A to DSA-SS applications. Chapter 16A is based on Chapter 16 of the 2006 IBC. To accommodate the substantial number of amendments for public school buildings and continued operation occupancy structures (essential services facilities) in moderate to high seismic areas, amended Chapter 16A is created.

Section 1601A.2 – This section requires that amendments to reference standard contained in the 2008 CBC be applied uniformly to all applicable standards. This section also addresses the resolution of discrepancy between the 2007 CBC and reference standards.

Section 1601A.3 – This section will codify the current DSA practice for enforcement agency approval and is consistent with the existing 2001 CBC requirements.

Section 1602A.1 (Relocated from 1641A.1 / 1602A, CBC 2001) – This section retains the definitions of enforcement agent from Section 1641A.1 of the 2001 CBC and its interchangeable use with the terms building official and/or code official in these regulations and reference standards is clarified.

Section 1603A.1 – This section makes reference to the requirement for construction documents contained in California Building Standards Administrative Code, CCR Title 24, Part 1.

Section 1603A.1.5.1 (Relocated from 1633A.2.3, CBC 2001) – This section retains the requirement for connections that resist design seismic forces to be detailed on drawings from Section 1633A.2.3 of the 2001 CBC. This is original language from the 1997 UBC carried forward as an amendment. This change simply moves the current standard, which is not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1603A.3.1 (Relocated from 1614A.1, CBC 2001) – This section retains the requirements for snow load posting from Section 1614A.1 of the 2001 CBC. Part of the text deleted is a maintenance function not a design or construction requirement. Maintenance requirement is implied in section 1603A.3.2. This change simply moves current standard, which is not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1603A.3.2 (Relocated from 1607A.3.5.2, CBC 2001) – This section retains the requirement that school boards and the state be responsible for keeping the actual load below the posted load from Section 1607A.3.5.2 of the 2001CBC 2001.

Table 1604A.3 (Relocated from Table 16A-W, CBC 2001) – This section retains the veneer deflection requirement from Table 16A-W from the 2001 CBC. This change simply moves current standard, which is not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1604A.3.7 (Relocated from 1613A.2, CBC 2001) – This section retains the lateral load deflection requirements from Section 1613A.2 of the 2001CBC. This change simply moves current standard, which is not addressed by model code to a new section of the code to be consistent with the IBC format. Also prescriptive requirements for diaphragm in the 2001 CBC are replaced by national standards.

Section 1604A.3.8 (Relocated from 1613A.1,CBC 2001) – This section retains the requirements from Section 1613A.1 of the 2001 CBC for an architect and/or structural engineer to develop deflection criteria when not specified in the building code and enforcement agency approval. Part of the text is the original 1997 UBC language. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

Table 1604A.5 (Relocated from Table 16-K, CBC 2001) – This table retains the requirements for state essential services buildings to be placed in Occupancy Category IV from the 2001 CBC Table 16-K. This change simply moves

current standard, which is not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1604A.11 (Relocated from 1605A.5, CBC 2001) – This section retains the requirement for unusual construction procedures to be detailed on the design drawing & be approved by the enforcement agent from Section 1605A.5 of the 2001CBC. This change simply moves current standard, which is not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1605A.3.2 (Relocated from 1632A.1, CBC 2001) – This section retains the provision of not allowing 1/3rd stress increase for intermittent connection from Section 1632A.1 of the 2001CBC. This change simply moves current standard, which is not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1605A.5 (Exception) – This section deletes the exception to the code provision, which is a relaxation of the current standards. For continued operation occupancy buildings, this relaxation can't be justified at this time because of unavailability of long term use data.

Section 1606A.3 (Relocated from 1607A.4.1, CBC 2001) – This section retains the requirements of roof to be designed for one reroofing load from Section 1607A.4.1 of the 2001 CBC. This change simply moves current standard, which is not addressed by model code to a new section of the code to be consistent with the IBC format.

Table 1607A.1 (Relocated from Tables 16A-A / 16A-B, CBC 2001) – This table retains the loading requirements for floor and storage racks from Tables 16A-A and 16A-B from the 2001 CBC. This change simply moves current standards, which are not addressed by the model code to a new section of the code to be consistent with the IBC format.

DSA-SS Amendment (footnotes m, n, o, p, p, q) continues current requirement in 2001 CBC for floor design live load (model code prescribes 40 psf, which is 20% lower than the 50 psf per this amendment). DSA is not aware of any serviceability problems or concerns with classroom floors designed to the current (50 psf) requirement, and would pre-fer to maintain current re-quirements. Otherwise, the 20% reduction from cur-rent requirements may result in more flexible floors with adverse vibra-tion or other discomfort for classroom occupants.

Section 1607A.11.2.2 (Relocated from 1607A.4.4, CBC 2001) – This section retains the loading requirements for uncovered open roof from Section 1607A.4.4 of the 2001 CBC. This change simply moves current standards, which are not addressed by the model code to a new section of the code to be consistent with the IBC format.

Section 1607A.13 (Relocated from 1611A.5, CBC 2001) – This section retains the deflection requirements for interior wall from Section 1611A.5 of the 2001CBC. This is the original 1997 UBC language retained as an amendment. This change simply moves current standards, which are not addressed by the model code to a new section of the code to be consistent with the IBC format.

Section 1608.2 – The reference to Alaska & Hawaii snow load is deleted.
Section 1608A.3 - This amendment provides for consistency of design requirements for DSA-SS regulated occu-pancies (public schools, community colleges, and state essential services buildings) and other buildings within the local jurisdiction in which the project is located.

Section 1609A.1.1.2 - This amendment provides for consistency of design requirements for DSA-SS regulated occupancies (public schools, community colleges, and state essential services buildings) and other buildings within the local jurisdiction in which the project is located.

Section 1609A.1.3 (Relocated from 1620A, CBC 2001) – This section retains the deflection requirements for wind load from Section 1620A of the 2001 CBC. This change simply moves current standards, which are not addressed by the model code to a new section of the code to be consistent with the IBC format.

Section 1609A.4 (Relocated from 1619, CBC 2001) – This section retains the requirement from Section 1619 of the 2001 CBC for an architect or structural engineer to provide a justification to the enforcement agent prior to using exposure B. This change simply moves current standard, which is not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1612A.3 – This section adds the requirement for flood hazard map adopted by local jurisdiction to be used as a basis for design in flood hazard areas as required by the IBC.

Section 1612A.5 – The section references are revised to accommodate relocation of Chapter 1 of the 2006 IBC to Appendix as Chapter 1 for the 2007 CBC.

Section 1613A.1 – This section is revised to ensure that all the amendments to ASCE 7 are incorporated in the design and the correct structural design category is adopted from the CBC instead of ASCE 7.

Requirements in exception which are not covered by scope of Chapter16A are deleted. In addition, Section 2308 reference is deleted to be consistent with modified Section 2308.

Section 1613A.1.1 (Relocated from 1626A.4, CBC 2001) – This section retains the requirements that structure with unusual configuration to provide same level of safety as the customary configuration from Section 1626A.4 of the 2001CBC 2001. This change simply moves current standards, which are not addressed by the model code to a new section of the code to be consistent with the IBC format.

Section 1613A.2 (Relocated from 1627A / 1641A, CBC 2001) – This section retains the definition of terms associated with earthquake from Sections 1627A and 1641A of the 2001CBC. Part of the text is the original 1997UBC language carried forward as amendment. This change simply moves current standard, which is not addressed by the model code to a new section of the code to be consistent with the IBC format.

Figure 1613.5.1 – The seismic maps in figures 1613.5 (1) through 1613.5 (14) found in Chapter 16 are not duplicated in Chapter 16A. These maps are also available in ASCE 7, Chapter 22.

Section 1613A.5.1 – The amendment is necessary to ensure consistency with Section 1613A.5.6.

Section 1613A.5.6 – The ductility and redundancy requirements in design and material standards depend on seismic design category. Requirement of this section for structure to be placed in Seismic Design Category D, as a minimum, will ensure that all structural design will be ductile and / or redundant. This requirement does not change the base shear required by model code.

Fault mapping is not perfect and attenuation relationship used by United States Geological Service does not address potential amplification of ground motion at bottom of valleys. Redundancy factor (ρ) is not applied to Seismic Design Category A through C. Most of the ductile detailing requirements in concrete, masonry and wood do not apply to Seismic Design Category A through C.

For DSA-SS applications, this amendment continues significant aspects of current 2001 CBC provisions for seismic load resisting systems and assemblies for DSA-SS occupancies (public schools, community colleges, and state essential services buildings). This amendment maintains statewide consistency for stock or reuse plans and modular or relocatable classroom con-struction, facilitating expedient reuse or relocation of school buildings. Without this amendment, some systems could be used in certain seismic design categories but not in others, and would be mostly deter-mined by project location.
This amendment would also maintain the current requirements for ductile shear wall systems, which are expected to endure moderate or larger seismic forces with minimal damage per Education Code Section 17280 (Field Act), facilitating continued use, minimal post-disaster disruption of occupancy, or use as an emergency shelter as required by Education Code Sections 40041.5, 400042.

Section 161A3.5.6.1 – The amendment is necessary to ensure consistency with Section 1613A.5.6.

Section 1613A.5.6.2 (Relocated from 1630A.2.3, CBC 2001) – ASCE 7 Section 12.14.1.1 limit simplified design procedure to Occupancy Category I and II. This change simply moves current standard from Section 1630.2.3 of the 2001 CBC to a new section of the code to be consistent with the IBC format.

Section 1613A.6.1 – This section refers to the IBC for wood structural panel diaphragms. DSA is proposing to replace the reference to the IBC with the CBC. While the CBC is proposed to be based upon the IBC, the amendment is necessary to ensure that the statutory code is properly referenced and to ensure changes to the IBC proposed by DSA are applied and enforced. Without this amendment, the non-amended IBC would apply.

Section 1613A.6.2 – This section codifies the current DSA practice of allowing Intermediate Moment Frames in base-isolated buildings. There is a concern about limited ductility of Ordinary Moment Frames in the plastic range & are not permitted.

Section 1614A.1 – This section modifies ASCE 7, which is the primary reference standard and basis for most of the requirements in Chapter 16A.

Section 1614A.1.1 – This section codifies the current DSA practice of requiring design criteria submittal prior to non-linear analysis. Wide use of non-linear analysis for design is a relatively new phenomenon, often resulting in subjective interpretation by the practicing engineer. This requirement will ensure uniformity in design using non-linear procedure.

Section 1614A.1.2 – This section creates uniformity in requirements contained in ASCE 7 & FEMA 356, so that new and existing structures will be designed to similar standards. Also, the current DSA practice of requiring site specific study for structures located within 10km of an active fault is codified.

Section 1614A.1.2 – This section codifies the current DSA practice of not allowing certain systems, which either have performed poorly in the past earthquakes or do not have enough accumulated knowledge and/or test data to justify their use under all circumstances. These systems can be used as an alternate system when pre-approved by the enforcement agency on a case by case basis.

Section 1614A.1.4 (Relocated from 1629A.8.3 /1630A.4.2, CBC 2001) – This section retains the requirements for two -stage analysis using equivalent lateral force procedure from Sections 1629A.8.3 and 1630A.4.2 from the 2001 CBC. Part of the text is original UBC 1997 language. This change simply moves current standards, which are not addressed by the model code to a new section of the code to be consistent with the IBC format.

Section 1614A.1.5 (Relocated from 1629A.9.1, 1630A.9.4 and 1629A.9.5, CBC 2001) – This section retains the requirements that certain irregular structures not to be used from the 2001CBC 2001, Sections 1629A.9.1, 1629A.9.4 and 1929A.9.5. Part of the text is the original 1997 UBC language carried forward as an amendment. This change simply moves current standard, which is not addressed by the model code to a new section of the code to be consistent with the IBC format.

Section 1614A.1.6 (Relocated from 1630A.1.1.5, CBC 2001) – This section retains the requirement of including earth pressure when there is a grade difference of more than six feet from Section 1630A.1.1.5 of the 2001 CBC. This change simply moves current standard, which is not addressed by the model code to a new section of the code to be consistent with the IBC format.

Section 1614A.1.7 (Relocated from 1630A.2.1, CBC 2001) – The minimum base shear requirement provided by ASCE 7 Equation 12.8 -5 is pretty much equivalent to requirement for base shear in Seismic Design Category A in Section 11.7. This is a deviation from current practice for both the 2003 IBC & the 2001 CBC. Since there is no practical experience with performance of structure with such a low base shear in seismically active areas such as California, this requirement is modified.

Equation 12.8-5 is modified to provide minimum base shear that can be achieved by using the 2001CBC Equation 30A.6:

For I = 1.00, C_a = 0.30 (for Seismic Zone 3, Soil Profile S_B)

C_s = 0.11x1.00x0.30 = 0.033

Use minimum base shear of 0.03 or 3%.

Section 1614A.1.8 – This section ensures that stability coefficient (θ) is calculated for proper deflection & not the deflection divided by importance factor as shown in ASCE 7 Equation 12.8-15.

Section 1614A.1.9 – This section will ensure that base shear generated by modal response spectrum analysis is not less than the base shear required for equivalent static base shear. This will be a relaxation of requirements from the 2001 CBC, Section 1631A.5.4 for irregular structures.

Section 1614A.1.10 (Relocated from 1633A.2.12, CBC 2001) – This section retains the requirement for foundation design from CBC Section 1633A.2.12. This change simply moves current standard, which is not addressed by the model code to a new section of the code to be consistent with the IBC format.

Section 1614A.1.11 – This section merely ensures that relative displacement is properly accounted for when importance factor is higher than 1.0.

Section 1614A.1.12 (Relocated from 2501A.5, CBC 2001) – The provisions of ASCE 7 and CISCA (Ceiling & Interior Systems Construction Association) for Seismic Zones 3 and 4 have been modified to be compatible with current requirements from Section 2501A.5 of the 2001CBC . This change simply moves the current standard, which is more restrictive than the model code to be consistent with the IBC format.

Section 1614A.1.13 (Relocated from 1644A.13.1.2.1, CBC 2001) – The requirements for HVAC Duct, Pipe & Trapeze have been retained from Section 1644A.13.1.2.1 of the 2001 CBC. This change simply moves current standard, which is not addressed by the model code to a new section of the code to be consistent with the IBC format.

Section 1614A.1.14 (Relocated from 1633A.2.13.1, CBC 2001) – This section retains the requirements of designing elevator guide rail from Section 1633A.2.13.1of the 2001 CBC. This change simply moves current standard, which is not addressed by the model code to a new section of the code to be consistent with the IBC format.

Section 1614A.1.15 (Relocated from 1644A.2.13.1, CBC 2001) – This section retains the requirements for retainer plate, acceleration & deflection from Section 1633A.2.13 of the 2001 CBC. This change simply moves current standard, which is not addressed by the model code to a new section of the code to be consistent with the IBC format.

Section 1614A.1.16 (Relocated from 1634A.5, CBC 2001) – This amendment is necessary for consistency with Section 1614A.1.7.

Section 1614A.1.17 (Relocated from 1657A.3, CBC 2001) – This section retains the requirements for higher importance factor for non-structural components in base isolated building from Section 1657A.3 of the 2001 CBC. This change simply moves current standard, which is not addressed by the model code to a new section of the code to be consistent with the IBC format.

Section 1614A.1.18 (Relocated from 1661A.2.7, CBC 2001) – This section retains the requirements that uplift & rocking be accounted for in analysis of base isolated buildings from Section 1661A.2.7 of the 2001 CBC. This change simply moves current standard, which is not addressed by the model code to a new section of the code to be consistent with the IBC format.

Section 1614A.1.19 (Relocated from 1661A.2.8, CBC 2001) – This section retains the requirements for inspection & replacement of isolators from Section 1661A.2.8 of the 2001CBC. This change simply moves current standard, which is not addressed by the model code to a new section of the code to be consistent with the IBC format.

Section 1614A.1.20 (Relocated from 1661A.2.9, CBC 2001) – This section retains the requirements for prototype & production isolator testing from Section 1661A.2.9 of the 2001CBC. This change simply moves current standard, which is not addressed by the model code to a new section of the code to be consistent with the IBC format.

Section 1614A.1.21 (Relocated from 1661A.2.8, CBC 2001) – This section retains the requirements for instrumentation of base isolated buildings from Section 1661A.2.8 of the 2001CBC. This change simply moves current standard, which is not addressed by the model code to a new section of the code to be consistent with the IBC format.

Section 1614A.1.22 (Relocated from 1661A.3.2, CBC 2001) – This section retains the requirements for building separation above base isolation for base isolated buildings from Section 1661A.3.2 of the CBC 2001. This change simply moves current standard, which is not addressed by the model code to a new section of the code to be consistent with the IBC format.

Section 1614A.1.23 (Relocated from 1657A.5.3.3, CBC 2001) – This section retains the requirements for site specific ground spectra from Section 1657A.5.3.3 of the 2001 CBC. This is original UBC 1997 language carried forward as an amendment. This change simply moves current standard, which is not addressed by the model code to a new section of the code to be consistent with the IBC format.

Section 1614A.1.24 (Relocated from 1659A.4.2, CBC 2001) – This section retains the requirements for ground motion time history scaling for isolated building from Section 1659A.4.2 of the 2001 CBC. This change simply moves current standard, which is not addressed by the model code to a new section of the code to be consistent with the IBC format.

Section 1614A.1.25 (Relocated from 1657A.5.2, CBC 2001) – This section retains the limitation for use of static force procedure in design of base isolated building from Section 1657A.5.2 of the 2001 CBC 2001. This change simply moves current standard, which is not addressed by the model code to a new section of the code to be consistent with the IBC format.

Section 1614A.1.26 (Relocated from 1657A.5.3, CBC 2001) – This section retains the limitation for use of response spectrum procedure for design of base isolated building from Section 1657A.5.3 of the 2001 CBC. This change simply moves current standard, which is not addressed by the model code to a new section of the code to be consistent with the IBC format.

Section 1614A.1.27 (Relocated from 1657A.5.1.1, CBC 2001) – This section retains the requirements for period separation in base isolated building from Section 1657A.5.1.1 of the 2001CBC. This change simply moves current standard, which is not addressed by the model code to a new section of the code to be consistent with the IBC format.

Section 1614A.1.28 (Relocated from 1664A.1, CBC 2001) – This section retains the requirements for design review of base isolated building design from Section 1657A.3 of the 2001 CBC. This change simply moves current standard, which is not addressed by the model code to a new section of the code to be consistent with the IBC format.

Section 1614A.1.29 – This section makes the requirements for use of non-linear time history analysis procedure uniform for all structures with damping devices.

Section 1614A.1.30 – This section will ensure uniformity in production testing for all buildings with damping devices.

The specific purpose and rationale for the amendments in 2007 CBC Chapters 17A provisions:

CHAPTER 17A
STRUCTURAL TESTS AND SPECIAL INSPECTIONS

REPEAL OF EXISTING CALIFORNIA AMENDMENTS IN PART OR IN WHOLE THAT ARE NO LONGER NECESSARY:

The 2006 IBC uses reference standards for design and materials requirements with amendments rather than incorporating them into the building codes as was done in the 2001 CBC, which is based on the 1997 UBC. Since two code cycles (2000 & 2003) have passed between the 1997 UBC and the 2006 IBC, some of the design concepts and philosophies contained in the 2001 CBC have become obsolete or irrelevant. Repeal of California amendments for those sections where the 2001 CBC design concepts or philosophies become obsolete or irrelevant are not addressed explicitly.

Amendments contained in the 2001 CBC are repealed except those shown in express terms. Where an entire amendment in a section or subsection is repealed they are shown as stricken through the section or subsection numbers. When amendments are carried forward the amended language are shown in the express terms and part of the text that is repealed are shown in strike-out. The first column of the adoption matrix shows which amendments are carried forward. The second column show where the amendment has been relocated to (by section). Any modification to amendments being carried forward is indicated and purpose and rationale stated.

Section 1701A.1 – The scope is revised by adding Sections 1701A.1.1 and 1701A.1.2 to clarify the application of

Chapter 17A to DSA-SS applications. Chapter 17A is based on the 2006 International Building Code (IBC), Chapter 17. To accommodate the substantial number of amendments for public school buildings and continued operation occupancy structures in moderate to high seismic areas, this amended Chapter 17A is created.

Section 1701A.4 (Relocated from 1701A.1.2, CBC 2001) – This section retains the requirement for the owner to retain special inspectors in addition to inspector(s) of record from the 2001 CBC, Section 1701A.1.2. Part of the text is the original 1997 UBC language. This change is consistent with the 2006 IBC requirements. This change is required to refer to proper sections of CCR Title 24, Part 1, which also require appointment of Inspector(s) of Record.

Section 1702A.1 – The section reference is revised to accommodate relocation of the 2006 IBC 2006 Chapter 1 to Appendix as Chapter 1 for the 2008 CBC.

Section 1704A.1 – The section references are revised to accommodate relocation of the 2006 IBC, Chapter 1 to Appendix as Chapter 1 for the 2008 CBC.

Section 1704A.1.1 – The section references are revised to accommodate relocation of the 2006 IBC, Chapter 1 to Appendix as Chapter 1 for the 2008 CBC. Also, the exception provided for wood design under Section 2308 is removed since construction inspection is vital for immediate occupancy structures.

Section 1704A.1.2 (Relocated from 1701A.3.2, CBC 2001) – This section retains the requirements for an inspection report to include the requirements of CCR Title 24, Part 1 from Section 1701A.3.2.This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1704A.2.1 (Exception) – This section codifies current DSA practice of requiring special inspection in shop for certain materials or assemblies. This will be a relaxation of requirements from the 2001 CBC, which require the same special inspection in the shop as in the field for DSA-SS regulated facilities.

Section 1704A.3.1.1 (Relocated from 2231A.5, CBC 2001) – This section retains the requirement for inspection of welding & welder qualifications from Section 2231A.5 of the 2001 CBC. This change simply moves current standard, which is not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1704A.3.2.1 (Relocated from 2231A.4, CBC 2001) – This section retains the requirements for significant steel structural detailed connections to be shop inspected when directed by enforcement agency from Section 2231A.4 of the 2001 CBC. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1704A.3.2.2 (Relocated from 2231A.5, CBC 2001) – This section retains the requirement for inspection of steel welding for joist and joist girder fabrication at shop from Section 2231A.5 of the 2001 CBC. This change simply moves current standard, which is not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1704A.3.2.3 (Relocated from 2231A.5, CBC 2001) – This section retains the requirement for inspection of welds for light framed steel truss from Section 2231A.5 of the 2001 CBC. This change simply moves current standard, which is not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1704A.4 (Exception) – The waiver of special inspection requirements for concrete in the exception is deleted because it is inconsistent with current DSA practice and considered inappropriate for public schools and continued operation occupancy structures in Seismic Design Categories D, E & F.

Table 1704A.4 (Relocated from 1701A.5.18, CBC 2001) – This table retains the requirements for inspection of post-installed anchor from Section 1701A.5.18 of the 2001 CBC. This change simply moves current standards, which is not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1704A.4.2 (Relocated from 1929A.12, CBC 2001) – This section retains the requirement for inspection of rebar welding & welder qualification from Section 1929A.12 of the 2001 CBC. This change simply moves current standard, which is not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1704A.4.3 (Relocated from 1929A.4, CBC 2001) – This section retains the requirement for inspection of the batch plant from Section 1929A.4 of the 2001 CBC. This change simply moves current standard, which is not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1704A.4.4 (Relocated from 1929A.5, CBC 2001) – This section retains the requirements for waiver of batch plant inspection from Section 1929A.5 of CBC 2001. This change simply moves current standard, which is not addressed by model code to a new section of the code to be consistent with IBC format.

Section 1704A.4.5 (Relocated from 1929A.9, CBC 2001) – This section retains the requirements for inspection of prestressed concrete Section 1929A.9 of the 2001 CBC. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1704A.4.6 (Relocated from 1905A.7.1, CBC 2001) – This section retains the requirement for concrete pre-placement inspection from Section 1905A.7.1 of the 2001 CBC. This change simply moves current standard, which is not addressed by model code to a new section of the code to be consistent with IBC format.

Section 1704A.4.7 (Relocated from 1929A.7, CBC 2001) – This section retains the requirements for placing record for concrete from Section 1929A.7 of the 2001 CBC. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1704A.5 (Exception) – The waiver for special inspection requirements in the exception for masonry is deleted because it is inconsistent with current DSA practice and considered inappropriate for public schools and continued operation occupancy structures in Seismic Design Category D, E and F.

Section 1704A.5.1 – Empirically designed masonry is not permitted in DSA-SS regulated facilities per Chapter 21A of the 2007 CBC. Requirements for special inspection of empirically designed masonry are deleted in this section. Also, the inspection requirements for Occupancy Categories II, III and IV are made uniform to ensure that there will be no uninspected masonry construction, and no change from 2001 CBC requirements.

Sections 1704A.5.2 and 1704A.5.3 - The inspection requirements for Occupancy Categories II, III and IV are made uniform to ensure uniformity in masonry construction.

Table 1704A.5.1 (Relocated from 1701A.5.18, CBC 2001) – This table retains the requirements for inspection of post-installed anchors in masonry from Section 1705.5.18 of the 2001 CBC. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

Table 1704A.5.3 (Relocated from 1701A.5.18, CBC 2001) – This table retains the requirements for inspection of post-installed anchors in masonry from Section 1705.5.18 of the 2001 CBC. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1704A.6 – This amendment is required for consistency with section 1704A.6.2 & 1704A.6.3.

Section 1704A.6.2 (Relocated from 2337A.1 & 2337A.3, CBC 2001) – This section retains the requirements for inspection of wood structural elements and assemblies (e.g. glued laminated timber, manufactured trusses, etc.) from Sections 2337A.1 & 2337A.3 of the 2001 CBC. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

For DSA-SS applications, this amendment provides for inspection of structural glued laminated timbers and wood trusses to ensure conformance with approved drawings & specifications, and Title 24. Conformance of structural glued laminated timber fabrication with code-referenced standard ANSI/-AITC A190.1 is typically established on the basis of independent periodic audits of the fabricator's quality control system by an accredited inspection and testing agency.

Conformance of structural glued laminated timbers with the project-specific requirements of the approved drawings has been determined on the basis of DSA's special inspection provisions, which have been in Title 24 for over fifty years. DSA is not aware of any significant problems or failures resulting from these requirements. The cost of these special inspections has been reported to DSA to be approximately 5% of the cost of the inspected product.

The Field Act (Education Code, Section 17280-17317) and the Essential Services Buildings Act (Health & Safety Code 16000-16023) requires comprehensive inspection of all construction by a project inspector, and by special inspectors for specialty work. These inspectors must verify that work conforrms with Title 24 building standards and the construction documents.

DSA believes that inspection of of these structural components, which are fabricated off-site, would be most effective if accomplished at the fabricator's plant, rather than at the project site. Visual inspection at the project site can not provide for verification of all requirements of the approved drawings. In the event that non-conformance is determined by visual inspection at the project site, corrective action may adversely affect the project schedule to a much greater extent than if the inspection had occurred at the fabricator's plant.

Section 1704A.6.3 (Relocated from 2337A.2, CBC 2001) – This section retains the requirements for inspection of timber connectors from Section 2337A.2 of the 2001 CBC. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1704A.7.1 (Relocated from 3301A.1, CBC 2001) – This section retains the requirements for inspection of soil fill from Section 3301A.1 of the 2001 CBC. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1704A.8.1 (Relocated from 1809A.6, CBC 2001) – This section retains the requirements for pile observation from Section 1809A.6 of the 2001 CBC. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1704A.9.1 (Relocated from 1809A.7.1, CBC 2001) – This section retains the requirements for pier observation From Section 1809A.7.1 of the 2001CBC. Terms which are not defined by IBC 2006 are deleted. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1704A.15 (Relocated from 1929A.10 & 1924A.11.2, CBC 2001) – This section retains the requirements for inspection of shotcrete from Sections 1929A.10 and 1924A.11.2 of the 2001 CBC. This change simply moves current standard, which is not addressed by model code to a new section of the code to be consistent with IBC format.

Section 1704A.16 (Relocated from 1701A.5.8, CBC 2001) – This section retains the requirements for inspection of reinforced gypsum concrete from Section 1701A.5.8 of the 2001 CBC. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1707A.3 (Exception) – The waiver for special inspection requirements in the exception is deleted because it is inconsistent with current DSA practice and considered inappropriate for public schools and continued operation occupancy structures in Seismic Design Category D, E and F.

Section 1707A.7 (Exception) – The waiver for special inspection requirements in the exception is deleted because it is inconsistent with current DSA practice and considered inappropriate for public schools and continued operation occupancy structures in Seismic Design Category D, E and F.

Section 1704A.10 (Relocated from 1664A.3, CBC 2001) – This section retains the requirement for inspection of prototype and production testing of isolator units and energy dissipation devices that are part of the seismic isolation system from Section 1664A.3 of the 2001 CBC. This change simply moves current standard, which is not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1708A.1.1 – Empirically designed masonry is not permitted in DSA-SS regulated facilities per Chapter 21A of the 2007 CBC. The requirement for special inspection of empirically designed masonry is deleted in this section to be consistent with Chapter 21A. The inspection requirements for Occupancy Categories II, III and IV are made uniform to ensure uniformity in masonry construction.
Section 1708A.1.2 – Empirically designed masonry is not permitted in DSA regulated facilities per Chapter 21A of the 2007 CBC. The requirement for special inspection of empirically designed masonry is deleted in this section to be consistent with chapter 21A. Also, inspection requirements for masonry construction in Occupancy Categories II, II and IV are made uniform. The inspection requirements for Occupancy Categories II, III and IV are made uniform to ensure uniformity in masonry construction.

Table 1708A.1.2 and 1708A.1.4 – Reference to AAC masonry is deleted since they are not permitted by Chapter 21A.

Sections 1708A.1.3 and 1708A.1.4 - The inspection requirements for Occupancy Categories II, III and IV are made uniform to ensure uniformity in masonry construction.

Section 1709A.2 (Relocated from 1702A.2, CBC 2001) – This section retains the requirement for structural observation of all DSA-SS regulated facilities from Section 1702A.2 of the 2001 CBC. This is required by Item # 1 in Section 1709.2 of the 2006 IBC, change only simplify the code text.

Section 1709A.3 (Relocated from 1702A.2, CBC 2001) – This section retains the requirement for structural observation of all DSA-SS regulated facilities from Section 1702A.2 of the 2001 CBC. This is required by Item # 1 in Section 1709.2 of the 2006 IBC, change only simplify the code text.

Section 1711A.1 – The section reference is revised to accommodate relocation of the 2006 IBC Chapter 1 to Appendix as Chapter 1 for the 2007 CBC.

The specific purpose and rationale for the amendments in 2007 CBC Chapters 18A provisions:

CHAPTER 18A
SOILS AND FOUNDATIONS

REPEAL OF EXISTING CALIFORNIA AMENDMENTS IN PART OR IN WHOLE THAT ARE NO LONGER NECESSARY:

The 2006 IBC uses reference standards for design and materials requirements with amendments rather than incorporating them into the building codes as was done in the 2001 CBC, which is based on the 1997 UBC. Since two code cycles (2000 & 2003) have passed between the 1997 UBC and the 2006 IBC, some of the design concepts and philosophies contained in the 2001 CBC have become obsolete or irrelevant. Repeal of California amendments for those sections where the 2001 CBC design concepts or philosophies become obsolete or irrelevant are not addressed explicitly.

Amendments contained in the 2001 CBC are repealed except those shown in express terms. Where an entire amendment in a section or subsection is repealed they are shown as stricken through the section or subsection numbers. When amendments are carried forward the amended language are shown in the express terms and part of the text that is repealed are shown in strike-out. The first column of the adoption matrix shows which amendments are carried forward. The second column show where the amendment has been relocated to (by section). Any modification to amendments being carried forward are indicated and purpose and rationale stated. Amendments that are relocated from existing Chapter 18A to a chapter other than Chapter 18A are shown in the relocated chapters

Section 1801A.1 – The scope is revised by adding sections 1801A.1.1 and 1801A.1.2 to indicate application of Chapter 18A to DSA-SS regulated facilities. Chapter 18A is based on Chapter 18 of the 2006 IBC. To accommodate substantial number of amendments for public schools and continued operation occupancy structures in moderate to high seismic areas, amended chapter 18A is created.

Requirements for grading to comply with Appendix Chapter J have been retained from CBC 2001 Section 1801A.1.1. Part of the text is the original 1997 UBC 1997 language. This change simply moves current standard, which is not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1802A.1 (Relocated from 1804A.1, CBC 2001) – This section retains the requirements for geotechnical investigation to be conducted under the responsible charge of a California registered geotechnical engineer from Section 1804A.1 of the 2001CBC. Enforcement agency approval requirement from several sections of Chapter 18A of CBC is replaced by an overall enforcement agency approval requirement in this section. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1802A.2 – The requirements for soil report is waived for small one story Type II or V Building not located in earthquake fault zones or seismic hazard zones. This section codifies the current DSA practice of allowing buildings less than 4000 square feet to be designed on the basis of presumptive soil bearing capacities provided in the building code. Also, use of available geotechnical report from adjacent area is prohibited because it is considered inappropriate for DSA-SS regulated facilities, which are designed for continued operation occupancy or expediently repairable damage after a major earthquake.

Section 1802A.2.1 – Editorial.

Section 1802A.2.3 – The soil report waiver provision is deleted because it is considered inappropriate for facilities intended for continued operation occupancy or expediently repairable damage after a major earthquake.

Section 1802A.2.4 – Editorial.

Section 1802A.2.6 – Editorial.

Section 1802A.2.7 – Exception is clarified so that site specific study is not required when exception is used, which is the intent of the exception.

Section 1802A.2.8 (Relocated from 1804A.3.8, CBC 2001) – This section retains the requirements for evaluating affect of high sulfate soil on durability of concrete from CBC Section 1804A.3.8. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1802A.4.1 (Relocated from 1804A.2 of the CBC 2001) – This section retains the requirement for minimum number of borings for soil investigation from CBC Section 1804A.2. Requirements of CBC 2001 that is already covered by IBC Chapter 18 is deleted. This change simply moves current standard, which is not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1802A.6 (Relocated from 1637A, CBC 2001) – This section retains the requirements for geologic report / geotechnical & supplemental ground response report from CBC Section 1637A with minor amendments. References are revised to be consistent with current CDMG requirements. Requirement for submitting of geologic and geotechnical reports in multiple stages is deleted to be consistent with current DSA practice. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1802A.7 (Relocated from 1804A.1, 1804A.3 & 1637A.2.1.1, CBC 2001) – This section retains the requirements for engineering geologic report & addressing stepped footing effect from CBC Sections 1804A.1, 1804A.3 & 1637A. Requirement of CBC 2001 that is already covered by IBC 2006 Chapter 18 is deleted. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1805A.1 (Relocated from 1806A.4, CBC 2001) – This section retains the requirement for steps in continuous footings from CBC Section 1806A.4. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1805A.4.1 (Relocated from 1806A.2, CBC 2001) – This section retains the provision that enforcement agency may require analysis of footing when appropriate to evaluate their effect on superstructure from Section 1806A.2 of the 2001CBC. This change simply moves current standard, which is not addressed by model code to a new section of the code to be consistent with the IBC format.

Table 1805A.4.2 (Relocated from Table 18A-I-C, CBC 2001) – The table retains the prohibition on use of isolated footing to support interior bearing wall without proper calculations from CBC Table 18A-I-C. This change simply moves current standard, which is not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1805A.4.2.3 – Plain concrete footing is not permitted to be consistent with Chapter 19A. This change simply moves current standard, which is not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1805A.4.2.6 (Relocated from 1806A.2, CBC 2001) – This section retains the requirements for increasing footing sizes when cast directly against soil from Section 1806A.2 of the 2001 CBC 2001. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1805A.4.3 – Masonry unit footings are not commonly used in California schools or state essential services facilities. There is not enough data on the performance of masonry footing in actual seismic event or cyclic testing to justify their use for occupancies under DSA-SS jurisdiction.

Section 1805A.4.5 – Timber footings are not commonly used in California schools or state essential services facilities. There is not enough data on the performance of masonry footing in actual seismic event or cyclic testing to justify their use for occupancies under DSA-SS jurisdiction..

Section 1805A.4.6 – Wood foundations are not commonly used in California schools or state essential services facilities. There is not enough data on the performance of masonry footing in actual seismic event or cyclic testing to justify their use for occupancies under DSA-SS jurisdiction.

Section 1805A.4.7 (Relocated from 1806A.11, CBC 2001) – This section retains the separation requirements for trenches & crossing requirements for pipes below footings from CBC Section 1806A.11. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1805A.5 (including Sub-Sections 1805.5.1 through 1805.5.5) – The prescriptive design of foundation walls based on presumptive soil properties is not permitted. For public schools and continued operation occupancy structures in moderate or high seismic areas, detailed design of foundation wall based on actual soil data is desirable. Seismic requirements in IBC Sections 1805.5 .5 / 1805.5.1.3 essentially prohibit use of tables in Section 1805A.5 for Seismic Design Categories D, E & F without proper design.

Section 1805A.5.6 – This section refers to section 2210A.4 for bolting or fastening of steel stud foundation plate for proper use of code.

Section 1805A.5.7.1 – This section deletes the requirements for wood poles and timber post treatment since they are not permitted in DSA-SS regulated facilities.

Section 1805A.9 – Editorial.

Section 1806A.1 (Relocated from 1611A.6, CBC 2001) – This section retains the requirements for retaining walls from Section 1611A.6 of the 2001CBC 2001. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1806A.2 (Relocated from 1611A.13, CBC 2001) – This section retains the requirements for freestanding cantilever walls from Section 1611A.13 of the 2001CBC. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1807A.2 – The reference to a wood foundation, which is not permitted by this chapter, is deleted to be consistency with the rest of the chapter.

Section 1807A.4.3 – This section refers to the International Plumbing Code for drainage system design. DSA-SS is proposing to replace the reference to the International Plumbing Code with the California Plumbing Code. California Plumbing Code is proposed to be based upon the Uniform Plumbing Code, the amendment is necessary to ensure that the statutory code is properly referenced and to ensure changes to the Uniform Plumbing Code proposed by DSA-SS will be applied and enforced. Without this amendment, the non-amended International Plumbing Code would apply.

Section 1808A.2.23.1 – This section deletes the reference to Section 1613 for determination of Seismic Design Category C, since it's not required due to the fact that only Seismic Design Categories D, E & F are allowed in DSA-SS regulated facilities per Section 1613A.

Section 1808A.2.23.2 (Exception) – This section deletes the waiver for requirements of ACI 318 to provide ductile design in Seismic Design Categories D, E & F areas, because it is considered inappropriate for public schools and continued operation occupancy structures in moderate to high seismic categories. Also, dwelling requirements are deleted since they are outside the scope of the Chapter.

Section 1808A.2.23.2.4 (Relocated from 1806A.8.1, CBC 2001) – This section retains the requirements for deformation compatibility of deep foundation with connected members from Section 1806A.8.1 of the 2001 CBC. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1809A.1 – This section prohibits the use of timber pile for public schools and continued operation occupancy structures in Seismic Design Categories D, E & F. There is not enough cyclic test data or seismic performance data from past seismic events on the ductile behavior of Timber pile to concrete pile caps.

Section 1809A.2.2.2.1 – This section deletes the reference to Section 1613 for determination of Seismic Design Category C, since it's not required due to the fact that only Seismic Design Categories D, E & F are allowed in DSA-SS regulated facilities per Section 1613A.

Section 1809A.2.3.2.1 – This section deletes the reference to Section 1613 for determination of Seismic Design Category C, since it's not required due to the fact that only Seismic Design Categories D, E & F are allowed in DSA-SS regulated facilities per Section 1613A.

Section 1809A.2.3.2.2 – This section prohibits the use of inner & outer spiral to satisfy spiral reinforcement requirements. There is not enough cyclic test data or seismic performance data from past actual seismic event to justify splitting the spiral rebar.

Section 1810A.1.2.1 – This section deletes the reference to Section 1613 for determination of Seismic Design Category C, since it's not required due to the fact that only Seismic Design Categories D, E & F are allowed in DSA-SS regulated facilities per Section 1613A.

Section 1810A.2 – The enlarged base pile is not used widely in California. Considering it as an alternate system will require design professional to submit a design criteria explaining the details.

Section 1810A.3.5 / 1810A.6.4.1 – Editorial.

Section 1810A.8.4.1 – The section reference is revised to accommodate relocation of Model Code Chapter 1 to Appendix as Chapter 1.

Section 1811A.4 – The splice between wood and steel / concrete pile is prohibited to be consistent with Section 1809A.1.

Section 1811A.8 – Plain concrete construction is prohibited to be consistent with Chapter 19A.

The specific purpose and rationale for the amendments in 2007 CBC Chapters 19A provisions:

CHAPTER 19A
CONCRETE

REPEAL OF EXISTING CALIFORNIA AMENDMENTS IN PART OR IN WHOLE THAT ARE NO LONGER NECESSARY:

The 2006 IBC uses reference standards for design and materials requirements with amendments rather than incorporating them into the building codes as was done in the 2001 CBC, which is based on the 1997 UBC. Since two code cycles (2000 & 2003) have passed between the 1997 UBC and the 2006 IBC, some of the design concepts and philosophies contained in the 2001 CBC have become obsolete or irrelevant. Repeal of California amendments for those sections where the 2001 CBC design concepts or philosophies become obsolete or irrelevant are not addressed explicitly.

Amendments contained in the 2001 CBC are repealed except those shown in express terms. Where an entire amendment in a section or subsection is repealed they are shown as stricken through the section or subsection numbers. When amendments are carried forward the amended language are shown in the express terms and part of the text that is repealed are shown in strike-out. The first column of the adoption matrix shows which amendments are carried forward. The second column show where the amendment has been relocated to (by section). Any modification to amendments being carried forward are indicated and purpose and rationale stated. Amendments that are relocated from existing Chapter 19A to a chapter other than Chapter 19A are shown in the relocated chapters.

Section 1901A.1 – The scope is revised by adding sections 1901A.1.1 and 1901A.1.2 to clarify application of Chapter 19A to DSA-SS regulated occupancies. Chapter 19A is based on the 2006 IBC, Chapter 19. To accommodate substantial number of amendments for public schools and continued operation occupancy structures in moderate to high seismic areas, amended chapter 19A is created.

Section 1903A.1 – The reference to testing requirements in Section 1916A is added to ensure proper application of code requirements.

Section 1903A.3 (Relocated from 1903A.3.2.2, CBC 2001) – This section retains the requirements for aggregate reactivity test & remedial measures for reactive aggregates from Section 1903A.3.2.2 of the 2001 CBC. References have been revised to current ASTM standards. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1903A.4 (Relocated from 1903A.5.2, CBC 2001) – This section retains the requirements for chemical analysis of rebars to be welded when mill test report is not available from Section 1903A.5.2 of the 2001 CBC. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1903A.5 (Relocated from 1903A.6.6, CBC 2001) – This section retains the requirements for use of fly ash from Section 1903A.6.6 of the 2001 CBC. Reference to mix design methods B and C are deleted since they are used by ACI 318-05. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1905A.1.1 (Relocated from 1905A.1.3, CBC 2001) – This section retains the requirements for minimum concrete strength from Section 1905A.1.3 of the 2001 CBC. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format. Also, requirements to treat concrete with specified compressive strength higher than 8 ksi to be treated as an alternative system is added to prevent use of high strength concrete in critical lateral resisting system without proper understanding of their behavior. ACI is planning to publish an technical document to address high strength concrete, until that happens this provision will minimize their indiscriminate use. ACI 318 Section D.3.5 limits concrete compressive strength to 8000 psi for post-installed anchor strength calculations.

Section 1905A.2 (Relocated from 1905A.3.3.2.7,CBC 2001) – This section retains the requirement for registered civil engineer to be responsible for selection of basic concrete proportions of the concrete mixes & testing be performed in an approved laboratory from Section 1905A.3.3.2.7 of the 2001 CBC. Revision of text is for clarifications only. This change simply moves current standard, which is not addressed by model code to a new section of the code to be consistent with the IBC format.

Section1905A.6.2 (Relocated from 1905A.6.1.3, CBC 2001) – This section retains the modified test frequency requirements from Section 1905A.6.1.3 of the 2001CBC. Also, the waiver of concrete testing provided in exception is deleted to be compatible with requirements from Section 1905A.6.1.3 of the 2001CBC. These changes simply move current standards, which are more strict than IBC to a new section of the code to be consistent with the IBC format.

Section 1905A.6.2.1 (Relocated from 1905A.6.1.1, CBC 2001) – This section retains the requirements for frequency of concrete strength test from Section 1905A.6.1.1 of the 2001 CBC. Part of the underlined text is the original 1997 UBC language. This change simply moves current standards, which are more strict than the IBC to a new section of the code to be consistent with the IBC format.

Section 1905A.8 (Relocated from 1905A.8.3, CBC 2001) – This section retains the requirement that no split sack batches be used for concrete mixing from Section 1905A.8.3 of the 2001 CBC. This change simply moves current standard, which is not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1905A.10.1 (Relocated from 1905A.10.10, CBC 2001) – This section retains the requirement for adjusting concrete mixes to ensure proper consolidation of concrete from Section 1905A.10.10 of the 2001 CBC. Change in text is for clarifications only. This change simply moves current standard, which is not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1905A.12 (Relocated from 1905A.12.4, CBC 2001) – This section retains the requirement for maintaining minimum temperature for concrete mixes in cold weather from Section 1905A.12.4 of the 2001 CBC. Terms Freezing or near Freezing weather which are not defined in ACI 318-05 is replaced by Cold Weather which is defined in ACI 318-05., This change simply moves current standard, which is not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1906A.2 (Relocated from 1906A.2.1, CBC 2001) – This section retains the requirement for not removing forming and shoring before 12 hours from Section 1906A.2.1 of the 2001CBC. This change simply moves current standard, which is not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1906A.3.1 (Relocated from 1906A.3.13, CBC 2001) – This section retains the requirement for large openings be detailed on the structural plans from Section 1906A.3.13 of the 2001CBC 2001. This change simply moves current standard, which is not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1906A.3.2 (Relocated from 1906A.3.14, CBC 2001) – This section retains the requirements for supporting pipes and conduits embedded in concrete from Section 1906A.3.14 of the 2001CBC. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1906A.4 (Relocated from 1906A.4.3, CBC 2001) – This section retains the requirements for construction joints to be detailed on plans from Section 1906A.4.3 of the 2001 CBC. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1906A.4.1 (Relocated from 1906A.4.7, CBC 2001) – This section retains the requirement for horizontal concrete construction joint preparation from Section 1906A.4.7 of the 2001CBC. This change simply moves current standard, which is not addressed by model code to a new section of the code to be consistent with the IBC format.

Section1907A.5.1 (Relocated from 1907A.5.5, CBC 2001) – This section retains the requirements for tolerances of pre-stressing tendons from Section 1907A.5.5 of the 2001 CBC 2001. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1907A.7.1 (Relocated from 1907A.7.1,CBC 2001– This section retains the requirement for concrete cover of tilt-up panels from Section 1907A.7.1 the 2001 CBC 2001. This change simply moves current standard, which is not addressed by model code to a new section of the code to be consistent with the IBC format.
Section 1908A.1 – This section modifies ACI 318 Chapters 8 through 21. All requirements related to Seismic Design Categories A, B and C are deleted because DSA-SS regulated facilities are restricted to Seismic Design Categories D, E & F per Section 1613A. Also, sections are renumbered to maintain sequence of ACI 318.

Section 1908A.1.1 (Relocated from 1908A.11.5, CBC 2001) – This section retains the requirement that permanent burned clay not be used as a structural element from Section 1908A.11.5 of the 2001 CBC 2001. Part of the text is original 1997 UBC language carried forward as an amendment. This change simply moves current standard, which is not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1908A.1.2 (Relocated from 1908A.11.6, CBC 2001) – This section retains the requirements for minimum slab thickness and reinforcement from Section 1908A.11.6 of the 2001CBC. Part of the text is original 1997 UBC language carried forward as an amendment. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

Section1908A.1.3 (Relocated from 1908A.11.9, CBC 2001) – This section retains the requirements for concrete bridging from Section 1908A.11.9 of the 2001 CBC. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

Section1908A.1.4 (Relocated from 1910A.5.3, CBC 2001) – This section retains the requirement that minimum reinforcement not be reduced for members resisting seismic loads from Section 1919A.5.3 of the 2001 CBC 2001. This change simply moves current standard, which is not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1908A.1.5 (Relocated from 1912A.14.3.6, CBC 2001) – This section retains the requirements for clearances and cover at welded and mechanical splice from Section 1912A.14.36 of the 2001 CBC 2001. This is original UBC 1997 language carried forward as an amendment. This change simply moves current standard, which is not addressed by model code to a new section of the code to be consistent with IBC format.

Section 1908A.1.6 – The technical paper by Mark Richie et. al. titled “Unbalanced Moment Resistance at Shear in Slab-Column Connections: Experimental Assessment”, ACI Structural Journal, February 2006 (Title no. 103-S09) showed that design per ACI Section 13.5.3.3 is unsafe & recommended removal of this section from code. Since ACI 318 committee has not acted on this recommendation yet, this section is essentially placed on hold by this amendment.

Section 1908A.1.7 (Relocated from 1914A.2.6, CBC 2001) – This section retains the requirements for minimum rebar for anchoring walls from Section 1914A.2.6 of the 2001 CBC. Part of the text is original 1997 UBC language carried forward as an amendment. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

Section1908A.1.8 (Relocated from 1914A.3.5, CBC 2001) – This section retains the requirements for locating upper and lower most rebars in wall from Section 1914A.3.5 of the 2001CBC. Part of the text is original 1997 UBC language carried forward as an amendment. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1908A.1.9 (Relocated from 1914A.3.8, CBC 2001) – This section retains the requirements for minimum rebar in precast walls from Section 1914A.3.8 of the 2001CBC. Part of the text is original 1997 UBC language carried forward as an amendment. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1908A.1.10 (Relocated from 1914A.5, CBC 2001) – This section retains the prohibition of design by empirical method from Section 1914A.5 of the 2001CBC 2001. This change simply moves current standard, which is not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1908A.1.11 (Relocated from 1914A.6.1, CBC 2001): – This section retains the requirements for minimum thickness of non-bearing walls from Section 1914A.6.1 of the 2001CBC. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

Section1908A.1.12 (Relocated from 1914A.10, CBC 2001) – This section retains the requirement for foundation walls for wood frame or light steel buildings from Section 1914A.2.6 of the 2001CBC. This change simply moves current standard, which is not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1908A.1.13 (Relocated from 1915A.2.1, CBC 2001) – This section retains the provision for converting working load to factored load from Section 1915A.2.1 of the 2001CBC. This change simply moves current standard, which is not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1908A.1.14 (Relocated from 1915A.2.2.2, CBC 2001) – Clarification for loads to be working level for this section have been retained from Section 1915A.2.2.2 of the 2001CBC. This change simply moves current standard,

which is not addressed by model code to a new section of the code to be consistent with IBC format.

Section 1908A.1.15 (Relocated from 1915A.8.3.2, CBC 2001) – This section retains the requirements for connections between precast walls and supporting members from Section 1915A.8.3.2 of the 2001 CBC. Part of the text is original 1997 UBC language carried forward as an amendment. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1908A.1.16 (Relocated from 1916A.3.3, CBC 2001) – This section retains the requirements for architectural nonbearing, nonshear panels from Section 1916A.3.3 of the 2001CBC. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1908A.1.17 (Relocated from 1916A.11, CBC 2001) – This section retains the requirement for minimum rebar and design forces for precast walls from Section 1916A.11 of the 2001 CBC 2001. This change simply moves current standard, which is not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1908A.1.18 (Relocated from 1916A.12, CBC 2001) – This section retains the requirement for on-site cast precast wall panels from Section 1916A.12 of the 2001CBC. This change simply moves current standard, which is not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1908A.1.19 (Relocated from 1917A.5.1.1, / 5.1.2, CBC 2001) – This section retains the requirements for full transfer of horizontal shear in a composite member from Section 1916A.5.11 and 1916.5.1.2 of the 2001 CBC. This is the original 1997 UBC language carried forward as an amendment. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1908A.1.20 (Relocated from 1918A.2.3.2, CBC 2001) – This section retains the requirements for connections to be analyzed per PCI Design Handbook from Section 1918A.2.3.2 of the 2001CBC. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

Section1908A.1.21 (Relocated from 1918A.2.4.2, CBC 2001) – This section retains the requirements for analysis of restrained prestressed concrete members per PCI Design Handbook from Section 1918A.2.4.2 of the 2001CBC. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

Section1908A.1.22 (Relocated from 1918A.2.7, CBC 2001) – This section retains the requirement for span to depth ratios for prestressed members from Section 1918A.2.7 of the 2001CBC 2001. This change simply moves current standard, which is not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1908A.1.23 (Relocated from 1918A.6.4, CBC 2001) – This section retains the provision for presumptive loss of pre-stress from Section 1918A.6.4 of the 2001CBC. This change simply moves current standard, which is not addressed by model code to a new section of the code to be consistent with the IBC format.

Section1908A.1.24 (Relocated from 1918A.9.2.2, CBC 2001) – This section retains the requirement for one-way, unbounded, posttensioned slab from Section 1918A.9.2.2 of the 2001 CBC. This is the original 1997 UBC language carried forward as an amendment. This change simply moves current standard, which is not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1908A.1.25 (Relocated from 1918A.9.2.3, CBC 2001) – This section retains the provision of spacing limitation of bonded reinforcement not applicable to unbonded tendon from Section 1918A.9.2.3 of the 2001 CBC. This is original 1997 UBC language carried forward as an amendment. This change simply moves current standard, which is not addressed by model code to a new section of the code to be consistent with the IBC format.

Section1908A.1.26 (Relocated from 1918A.12.7, CBC 2001) – This section retains the requirements for opening in flat plates from Section 1918A.12.7 of the 2001 CBC. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1908A.1.27 (Relocated from 1918A.19.5, CBC 2001) – This section retains the requirements for prequalification of anchorages and coupler from Section 1918A.19.5 of the 2001 CBC. This change simply moves

current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1908A.1.28 (Relocated from 1918A.21, CBC 2001) – This section retains the requirements for prestressed flat slab have Section 1918A.21 of the 2001 CBC. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1908A.1.30 (Relocated from 1921A.2.1.2, CBC 2001) – This clarification for applicability of the section from Section 1921A.2.1.2 of the 2001 CBC. This is original 1997 UBC language carried forward as an amendment. This change simply moves current standard, to a new section of the code to be consistent with the IBC format.

Section1908A.1.33 (Relocated from 1921A.2.5.5, CBC 2001) – This section retains the prohibition on using shear strength provided by prestressing tendons from Section 1921A.2.5.5 of the 2001 CBC. This change simply moves current standard, which is not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1908A.1.34 (Relocated from 1921A.4.4.1, CBC 2001) – This section retains the requirements for providing additional transverse reinforcing for columns when point of contraflexure in not within the middle half of member clear height from Section 1921A.4.4.1 of the 2001 CBC. This is the original 1997 UBC language carried forward as an amendment. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1908A.1.35 (Relocated from 1921A.4.4.7,CBC 2001) – This section retains the requirements for providing additional transverse reinforcing for columns when column strength is less than sum of shear strength of beams framing into the column from Section 1921A.4.4.7 of the 2001 CBC. This is original 1997 UBC language carried forward as an amendment. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1908A.1.36 (Relocated from 1921A.5.4.5, CBC 2001) – This section retains the requirements for splice length adjustment of rebar from Section 1921A.5.4.5 of the 2001CBC. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1908A.1.37 (Relocated from 1921A.6.2.2,CBC 2001) – This section retains the requirements for providing additional bar at shear wall edges and minimum rebar at openings from Section 1921A.6.2.2 of the 2001CBC. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1908A.1.38 (Relocated from 1921A.6.6.3.2, CBC 2001) – This section retains the requirements for wall with heavy axial loads not contributing to resistance of earthquake loads from Section 1921A.6.6.3.2 of the 2001 CBC. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1908A.1.41 (Relocated from 1921A.6.12, CBC 2001) – This section retains the requirements for minimum thickness of collector and boundary elements from Section 1921A.6.12 of the 2001 CBC. This is original 1997 UBC language carried forward as an amendment. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1908A.1.42 (Relocated from 1921A.6.6.4, CBC 2001) – This section retains the requirements for minimum rebar at edges and openings from Section 1921A.6.6.4 of the 2001CBC. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1908A.1.43 – This section refers to the IBC for foundation design per Chapter 18A. DSA is proposing to replace the reference to the IBC with the CBC. While the CBC is proposed to be based upon the IBC, the amendment is necessary to ensure that the statutory code is properly referenced and to ensure changes to the IBC proposed by DSA are applied and enforced. Without this amendment, the non- amended IBC would apply.

Section 1908A.1.45 – This section refers to the IBC for load combinations. DSA is proposing to replace the reference to the IBC with the CBC. While the CBC is proposed to be based upon the IBC, the amendment is necessary to

ensure that the statutory code is properly referenced and to ensure changes to the IBC proposed by DSA are applied and enforced. Without this amendment, the non-amended IBC would apply.

Section 1908A.47 – The reference to Seismic Design Category C is deleted, since it is not permitted by per Chapter 16A.

Section 1909A.1(Relocated from 1922A.1, CBC 2001) – This section retains the requirement that plain concrete not be used in structural design other than for fill from Section 1922A.1 of the 2001 CBC. This change simply moves current standard, which is not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1912A.1 – Editorial.

Section 1913A.1 (Relocated from 1924A.1, CBC 2001) – This section retains the general requirements for shotcrete from Section 1924A.1 of the 2001CBC 2001. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1913A.7 (Relocated from 1924A.7, CBC 2001) – This section retains the requirements for removing laitance at shotcrete from Section 1924A.7 of the 2001 CBC. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1913A.10 (Relocated from 1924A.10, CBC 2001) – This section retains the requirements for using ASTM standards for testing from Section 1924A.10 of the 2001 CBC. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1913A.10.2 (Relocated from 1924A.10, CBC 2001) – This section retains the requirements for prior approval by enforcement agency for test panel method from CBC 2001 Section 1924A.10. This change simply moves current standard, which is not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1913A.11 (Relocated from 1924A.12, CBC 2001) – This section retains the requirements for using the same equipment used in testing in actual work unless approved otherwise by enforcement agency from Section 1924A.12 of the 2001 CBC. Part of the text is original UBC 1997 language carried forward as an amendment. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

Section1913A.12 (Relocated from 1924A.13, CBC 2001) – This section retains the requirements for forms and ground wires for shotcrete from Section 1924A.13 of the 2001 CBC. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with IBC format.

Section 1913A.13 (Relocated from 1924A.14, CBC 2001) – This section retains the requirements for placing shotcrete per ACI 506 from Section 1924A.14 of the 2001 CBC. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

Section1914A.1: Reinforced gypsum concrete is not typically used in the school buildings or state essential services facilities. No recent cyclic test data or performance data during actual seismic event is available for use of reinforced gypsum concrete. This system would be considered as an alternative system, for purposes of DSA review and approval.

Sections 1916A.1 through 1916A.7 (Relocated from 1929A, CBC 2001) – These sections retain the requirements for concrete testing from Section 1929A of the 2001 CBC. Language is revised as shown to be consistent with current DSA practice. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1916A.8 (Relocated from 1923A.3.5, CBC 2001) – This section retains the requirement for testing of expansion bolts and chemical anchors from Section 1923A.3.5 of the 2001 CBC 2001. This change simply moves current standard, which is not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 1917A (Relocated from 1930A, CBC 2001) – This section retains the requirements for existing concrete structures from Section 1930A of the 2001 CBC. Section reference to Masonry is deleted because for strengthening existing unreinforced masonry is not there anymore. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

The specific purpose and rationale for the amendments in 2007 CBC Chapters 20 provisions:

CHAPTER 20
ALUMINUM

REPEAL OF EXISTING CALIFORNIA AMENDMENTS IN PART OR IN WHOLE THAT ARE NO LONGER NECESSARY:

The 2006 IBC uses reference standards for design and materials requirements with amendments rather than incorporating them into the building codes as was done in the 2001 CBC, which is based on the 1997 UBC. Since two code cycles (2000 & 2003) have passed between the 1997 UBC and the 2006 IBC, some of the design concepts and philosophies contained in the 2001 CBC have become obsolete or irrelevant. Repeal of California amendments for those sections where the 2001 CBC design concepts or philosophies become obsolete or irrelevant are not addressed explicitly.

Amendments contained in the 2001 CBC are repealed except those shown in express terms. Where an entire amendment in a section or subsection is repealed they are shown as stricken through the section or subsection numbers. When amendments are carried forward the amended language are shown in the express terms and part of the text that is repealed are shown in strike-out. The first column of the adoption matrix shows which amendments are carried forward. The second column show where the amendment has been relocated to (by section). Any modifications to amendments being carried forward are indicated and purpose and rationale stated.

Section 2003.1 (Relocated from 2004A.8, CBC 2001): This section retains the requirements for inspection of aluminum from Section 2004A.8 of the 2001CBC. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

The specific purpose and rationale for the amendments in 2007 CBC Chapters 21A provisions:

CHAPTER 21A
MASONRY

REPEAL OF EXISTING CALIFORNIA AMENDMENTS IN PART OR IN WHOLE THAT ARE NO LONGER NECESSARY:

The 2006 IBC uses reference standards for design and materials requirements with amendments rather than incorporating them into the building codes as was done in the 2001 CBC, which is based on the 1997 UBC. Since two code cycles (2000 & 2003) have passed between the 1997 UBC and the 2006 IBC, some of the design concepts and philosophies contained in the 2001 CBC have become obsolete or irrelevant. Repeal of California amendments for those sections where the 2001 CBC design concepts or philosophies become obsolete or irrelevant are not addressed explicitly.

Amendments contained in the 2001 CBC are repealed except those shown in express terms. Where an entire amendment in a section or subsection is repealed they are shown as stricken through the section or subsection numbers. When amendments are carried forward the amended language are shown in the express terms and part of the text that is repealed are shown in strike-out. The first column of the adoption matrix shows which amendments are carried forward. The second column show where the amendment has been relocated to (by section). Any modifications to amendments being carried forward are indicated and purpose and rationale stated. Amendments that are relocated from existing Chapter 21A to a chapter other than Chapter 21A are shown in the relocated chapters.

Section 2101A.1 – The scope is revised by adding Sections 2101A.1.1 and 2101A.1.2 to clarify application of

Chapter 21A to DSA-SS regulated occupancies. Chapter 21A is based on Chapter 21 of the 2006 IBC. To accommodate the substantial number of amendments for immediate occupancy structures in moderate to high seismic areas, amended Chapter 21A was created.

Section 2101A.2.2 – Section 2101.2.2 of the IBC does not allow Autoclaved Aerated Concrete (AAC) Masonry in seismic force resisting system in Seismic Design Category D, E and F. There is no cyclic test or past performance data to justify use of AAC masonry in non-load bearing walls of immediate occupancy structures subjected to seismic loads. Hence, AAC Masonry is not permitted for any application in DSA-SS regulated facilities.

Section 2101A.2.3 – Prestressed masonry walls are not allowed in Seismic Design Category D, E and F per ASCE 7 Table 12.2-1. The amendment in this section simply ensures that requirement of ASCE 7 is followed.

Section 2101A.2.4 (Relocated from 2109A, CBC 2001) – This section retains the prohibition on empirical design of masonry from Section 2109A of the 2001CBC. This amendment ensures that limitations in Section 2109A.1.1.1 of the 2006 IBC 2006 will be enforced. This change simply moves current standard to a new section of the code to be consistent with the IBC format.

Section 2101A.2.5 (Relocated from 2110A .1, CBC 2001) – This section retains the restrictions on using glass unit masonry for non-bearing non-structural walls from Section 2110A.1 of the 2001CBC. This is a relaxation of prohibition on empirical design of Masonry per IBC 2006 section 2210. This change simply moves current standard to a new section of the code to be consistent with the IBC format.

Section 2102A.1 (Relocated from 2101A.3, CBC 2001 – This section retains the definition of hollow unit masonry wall from Section 2101A.3 of the 2001 CBC. This change simply moves current standard, which is not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 2103A.3 – This amendment is required to be consistent with Section 2101A.2.2.

Section 2103A.8 (Relocated from 2103A.3.1, CBC 2001) – This section retains the requirement for mortar to be limited to Type S, lime to be the last materials added to the mixer and aggregate to conform to ASTM C 144 from Section 2103A.3.1 of the 2001CBC. This change simply moves current standard, which is not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 2103A.11 – This amendment is required to be consistent with Section 2101A.2.2.

Section 2103A.12 (Relocated from 2103A.4.2 / 2103A.4.3, CBC 2001) – This section retains the requirements for grout, proportioning, water and aggregate for grout from Sections 2103A.4.2 and 2103A.4.3 of the 2001 CBC. Part of the text is the original 1997 UBC language. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 2103A.13.6 – This amendment is required to be consistent with Section 2101A.2.3.

Section 2103A.13.7 – This amendment is required to be consistent with Section 2101A.2.3.

Section 2103A.14 (Relocated from 2103A.5, CBC 2001) – This section retains the requirements for additive and admixtures for grout and mortar from Section 2103A.5 of the 2001 CBC. Part of the text is the original 1997 UBC language which is carried forward as an amendment. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 2104A.1.2 – This amendment is required to be consistent with Section 2101A.2.2.

Section 2104A.1.2.5 (Relocated from 2110A.2, CBC 2001) – This section retains the requirements for treating mortar contact surfaces for adhesion from Section 2110A.2 of the 2001 CBC. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 2104A.1.2.6 – This amendment is required to be consistent with Section 2101A.2.2.

Section 2104A.1.2.7 – This amendment is required to be consistent with Section 2104A.6.

Section 2104A.2 (Relocated from 2104A.4.5, 2001) – This section retains the requirements for corbelled masonry from Section 2104A.4.5 of the 2001 CBC 2001. This change simply moves current standards which is more strict than new model code to a new section of the code to be consistent with the IBC format.

Section 2104A.3.2.2 – This amendment is required to be consistent with Section 2101A.2.2.

Section 2104A.3.3.2 – This amendment is required to be consistent with Section 2101A.2.2.

Section 2104A.4.2.1 – This amendment is required to be consistent with Section 2101A.2.2.

Section 2104A.6 (Relocated from 2104A.6, 2001) – This section retains the requirements for grouted masonry from Section 2104A.6 of the 2001CBC 2001. Part of the text is original 1997 UBC language that is required to make the 2001 CBC amendments meaningful. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 2104A.7 (Relocated from 2104A.7, CBC 2001) – This section retains the prohibition on use of aluminum equipment for handling grout from Section 2104A.7 of the 2001 CBC. This is original 1997 UBC language that is not being addressed by model code. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 2105A.2.1 (Relocated from 2105A.3.0, CBC 2001) – This section retains the limitations on design compressive strength of masonry and associated test requirements from Section 2105A.3.0 of the 2001CBC. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format. Also, requirement for AAC masonry, which is not permitted in DSA-SS regulated facilities, is deleted.

Section 2105A.2.2 – The applicability of the section is clarified to accommodate limitations in Section 2105A.2.1. Also, requirement for AAC masonry, which is not permitted in DSA-SS regulated facilities, is deleted.

Section 2105A.2.2.1.3 – Requirements for AAC masonry, which are not permitted in DSA-SS regulated facilities, is deleted.

Section 2105A.2.2.1 – Requirements for using prism test method is clarified.

Section 2105A.2.2.2.2 (Relocated from 2105A.3.2, CBC 2001) – This section retains the requirement for masonry prism testing from Section 2105A.3.2 of the 2001 CBC. Part of the text is original 1997 UBC language. This change simply moves current standard, which is not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 2105A.2.2.3 (Relocated from 2105A.3.3, CBC 2001) – This section retains the requirement for compressive design strength verifications by masonry prism test record from Section 2105A.3.2 of the 2001CBC. Part of the text is original 1997 UBC language. This change simply moves current standard, which is not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 2105A.3 – The applicability of this section is clarified to accommodate the requirements of Sections 2105A.4 and 2105A.5.

Section 2105A.4 (Relocated from 2105A.3.1, CBC 2001) – This section retains the requirement for masonry core testing from Section 2105A.3.1 of the 2001CBC. This change simply moves current standard, which is not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 2105A.5 (Relocated from 2105A.3.4, CBC 2001) – This section retains the requirements for mortar and grout testing from Section 2105A.3.4 of the 2001 CBC 2001. Part of the text is original 1997 UBC language. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 2106A.1.1.1 – Ordinary plain prestressed masonry shear wall is not permitted per ASCE 7 Table 12.2-1 in

Seismic Design Categories D, E and F, all DSA-SS regulated facilities are in one of those categories. Amendment is required to ensure consistency with ASCE 7 for DSA-SS regulated facilities.

Section 2106A.1.1.2 – Intermediate prestressed masonry shear wall is not permitted per ASCE 7 Table 12.2-1 in Seismic Design Categories D, E and F, all DSA-SS regulated facilities are in one of those categories. Amendment is required to ensure consistency with ASCE 7 for DSA-SS regulated facilities.

Section 2106A.1.1.3 – Special prestressed masonry shear wall is not permitted per ASCE 7 Table 12.2-1 in Seismic Design Categories D, E and F, all DSA-SS regulated facilities are in one of those categories. Amendment is required to ensure consistency with ASCE 7 for DSA-SS regulated facilities.

Section 2106A.5.3.1 (Relocated from 2106A.1.12.4 and 2104A.8, CBC 2001) – This section retains the requirements for minimum reinforcement in masonry walls from Sections 2104A.8 and 2106A.1.12.4 of the 2001 CBC. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 2106A.5.3.2 (Relocated from 2103A.1.12.4, CBC 2001) – This section retains the requirements for minimum reinforcement in masonry columns from Section 2105A.1.12.4 of the 2001CBC. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 2106A.5.4 (Relocated from 2106A.1.7, CBC 2001) – This section retains the requirement for lateral support of masonry from Section 2105A.1.7 of the 2001CBC. Part of the text is original 1997 UBC language. This change simply moves current standard, which is not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 2107A.1.1 (Relocated from 2107A.1.4, CBC 2001) – Masonry design assumptions for allowable stress design have been retained from Section 2107A.1.4 of the 2001 CBC. This will prevent misuse of design requirements beyond their intended scope. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 2107A.4 (Relocated from 2107A.1.5.3, CBC 2001) – This section retains the requirement for adjustment of anchor bolt capacities for edge distance and spacing from Section 2107A.1.5.3 of the 2001CBC. Part of the text is original 1997 UBC language. This change simply moves current standard, which is not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 2107A.4 IBC 2006 – The requirements for Seismic Design Categories A, B and C are deleted since only Seismic Design Categories D, E and F are permitted in DSA-SS regulated facilities per Section 1613A.

Section 2107A.5 (Relocated from 2106A.2.14.1, CBC 2001) – This section retains the requirement for anchor bolt size and materials from Section 2106A.2.14.1 of the 2001 CBC 2001. This change simply moves current standard, which is not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 2107A.6 (Relocated from 2106A.2.7, CBC 2001) – This section retains the requirement for anchoring walls and columns and requirements for bearing of concentrated load on walls from Section 2106A.2.7 of the 2001 CBC 2001. This change simply moves current standard, which is not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 2107A.9 (Relocated from 2106A.2.3.3, CBC 2001) – This section retains the requirement for minimum thickness of masonry walls from Section 2106A.2.3.3 of the 2001 CBC. This change simply moves current standard, which is not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 2107A.2.10 (Relocated from 2107A.3, CBC 2001) – This section retains the practice of not permitting unreinforced masonry in DSA-SS regulated facilities from Section 2107A.3 of the 2001CBC 2001. This change simply moves current standard, which is not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 2107A.12 – The requirement for maximum reinforcement ratio is simplified and expanded to all reinforced masonry components for public schools and continued operation occupancy structures in Seismic Design Category D,

E and F facilities.

Section 2108A.1 (Exception) – This amendment is required to be consistent with Section 2101A.2.2.

Section 2108A.2 (Relocated from 2107A.3, CBC 2001) – This section retains the practice of not permitting unreinforced masonry in DSA-SS regulated facilities from Section 2107A.3 of the 2001 CBC. This change simply moves current standard, which is not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 2108A.5 – This amendment is required to be consistent with Section 2106A.1.1.3.

Section 2109A (Relocated from 2109A, CBC 2001) – Section 2909.1.1 of the IBC prohibits use of empirical design in Seismic Design Categories D, E and F. This prohibition is consistent with requirements of Section 2109A of the 2001 CBC. Prohibited text is deleted from the amended Chapter 21A. Amendment simply deletes design requirements that are not permitted by IBC 2006.

Section 2110A.1 (Relocated from 2110A.1, CBC 2001) – This section retains the restriction on use of glass unit masonry for non-structural non-bearing walls only from Section 2110A.2 of the 2001 CBC. Part of the text is 1997 UBC language carried forward as an amendment. This change simply moves current standard to a new section of the code to be consistent with the IBC format.

Section 2111A.3 – The requirements for Seismic Design Categories A, B and C are deleted since they are not permitted by DSA-SS per Section 1613A.

Section 2113A.5 (Relocated from 2104A.4.5, CBC 2001) – The requirements for corbelling defined in Section 2104A.2 are referenced to make all corbels design consistent. This will also make all corbel design consistent with requirements from Section 2104A.4.5 of the 2001CBC.

Section 2113A.11.1.2 – This section refers to the International Fuel Gas Code for flue lining systems. DSA-SS is proposing to replace the reference to the International Fuel Gas Code with the California Mechanical Code. The California Mechanical Code is based on Uniform Mechanical Code, the amendment is necessary to ensure that the statutory code is properly referenced and to ensure changes to the Uniform Mechanical Code proposed by DSA-SS are applied and enforced. Without this amendment, the non-amended International Fuel Gas Code would apply.

Section 2113A.15 (Exception) – This section refers to the International Fuel Gas Code for Flue lining systems. DSA-SS is proposing to replace the reference to the International Fuel Gas Code with the California Mechanical Code. California Mechanical Code is based on Uniform Mechanical Code, the amendment is necessary to ensure that the statutory code is properly referenced and to ensure changes to the Uniform Mechanical Code proposed by DSA-SS are applied and enforced. Without this amendment, the non-amended International Fuel Gas Code would apply.

Section 2114A (Relocated from 2112A, CBC 2001) – This section retains the requirements for masonry non-bearing walls from Section 2112A of the 2001 CBC. This change simply moves current standard, which is not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 2115A (Relocated from 2113A, CBC 2001) – This section retains the requirements for masonry screen walls from Section 2113A of the 2001 CBC. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

The specific purpose and rationale for the amendments in 2007 CBC Chapters 22A provisions:

CHAPTER 22A
STEEL

REPEAL OF EXISTING CALIFORNIA AMENDMENTS IN PART OR IN WHOLE THAT ARE NO LONGER NECESSARY:

The 2006 IBC uses reference standards for design and materials requirements with amendments rather than

incorporating them into the building codes as was done in the 2001 CBC, which is based on the 1997 UBC. Since two code cycles (2000 & 2003) have passed between the 1997 UBC and the 2006 IBC, some of the design concepts and philosophies contained in the 2001 CBC have become obsolete or irrelevant. Repeal of California amendments for those sections where the 2001 CBC design concepts or philosophies become obsolete or irrelevant are not addressed explicitly.

Amendments contained in the 2001 CBC are repealed except those shown in express terms. Where an entire amendment in a section or subsection is repealed they are shown as stricken through the section or subsection numbers. When amendments are carried forward the amended language are shown in the express terms and part of the text that is repealed are shown in strike-out. The first column of the adoption matrix shows which amendments are carried forward. The second column show where the amendment has been relocated to (by section). Any modifications to amendments being carried forward are indicated and purpose and rationale stated. Amendments that are relocated from existing Chapter 22A to a chapter other than Chapter 22A are shown in the relocated chapters.

Section 2201A.1 – The scope is revised by adding Sections 2201A.1.1 and 2201A.1.2 to clarify application of Chapter 22A to DSA-SS regulated facilities. Chapter 22A is based on Chapter 22 of the 2006 IBC. To accommodate substantial number of amendments for immediate occupancy structures in moderate to high seismic areas, amended Chapter 22A was created.

Section 2204A.1.1 (Relocated from 2205A.10.2, CBC 2001) – This section retains the prohibition on adding welded splice unless shown on approved plans from Section 2205A.10.2 of the 2001CBC. This change simply moves current standard, which is not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 2204A.1.2 (Relocated from 2205A.13, CBC 2001) – This section retains the requirements for using reduced shear strength for welded shear connector to transfer loads except for composite action from Section 2205A.13 of the 2001 CBC. Changes in the section are necessary to make the section consistent with new format of AISC 360. Also, requirement is clarified by permitted higher allowable strength when design force includes over strength factor or strength is justified by test data. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 2204A.2.2 (Relocated from 2205A.12, CBC 2001) – requirements for incorporating affect of bending of anchor bolts when using oversized hole in the base plate have been retained from CBC 2001 section 2205A.12. Combined stress formula is deleted because it is provided in a different format in ACI 318-05, Appendix D. This change simply moves current standard, which is not addressed by model code to a new section of the code to be consistent with IBC format.

Section 2205A.1.1(Relocated from 2209A.4, CBC 2001) – requirements for designing welds to carry full load when used in a bearing type connection with bolts have been retained from CBC 2001 section 2209A.4. This change simply moves current standard, which is not addressed by model code to a new section of the code to be consistent with IBC format.

Section 2205A.2.1 – The requirements for Seismic Design Category A, B & C is deleted since they are not permitted by DSA per section 1613A.

Section 2205A.2 .2 – The requirements for all steel structure to be designed per AISC 341 is added to make the requirement in AISC 341 compatible with ASCE Table 12.2-1 item # H.

Section 2205A.3.1 – The requirement for use of composite structure to be considered as an alternate system is added. Section as written in IBC will require approval by building official, change will require that a design criterion be pre-approved by DSA-SS.

Section 2206A.4 – The requirements for enforcement agency approval and seal / signature of engineer of record is added to be compatible with CCR Title 24, Part 1.

Section 2206A.6 (Relocated from 2205A.7.1, CBC 2001) – This section retains the requirement for testing of materials for joist and joist chord bracing from Section 2205A.7.1 of the 2001CBC. Part of the text deleted is inconsistent with IBC 2006 format. This change simply moves current standard, which is more restrictive than model code to a new section of the code to be consistent with the IBC format.

Section 2209A.3 (Relocated from 2205A.4.1, CBC 2001) – This section retains the requirements for steel deck diaphragms from Section 2205A.4.1 of the 2001CBC. Part of the text deleted is inconsistent with IBC 2006 format. Also, requirements for weld washers is deleted because it is not commonly used in DSA-SS regulated facilities and is not required for materials 20 gage or thicker. This change simply moves current standards, which are not addressed in model code to a new section of the code to be consistent with the IBC format.

Section 2206A.3 – The requirements for submission of engineering analysis, report and drawings for enforcement agency approval are added to be compatible with CCR Title 24, Part 1.

Section 2210A.5 (Relocated from 2219A.2, CBC 2001) – This section retains the prohibition on use of gypsum board as shear wall from Section 2219A.2 of the 2001 CBC. This change simply moves current standard, which is more restrictive than model code to a new section of the code to be consistent with the IBC format.

Section 2210A.6 – The prescriptive design using metal stud for dwellings and town houses is prohibited because residential construction do not fall under DSA-SS jurisdiction and is not within the scope of Chapter 22A.

Section 2211A - For DSA-SS applications, this amendment addresses a specific type of steel frame in current use and unique to California school construction, and which is not addressed in the 2006 IBC or referenced standards.

Light modular steel moment frame buildings have been in use in California in a variety of occupancies for many years. Thousands of these buildings have been in service for many years in public schools, office occupancies and other uses. These units, which due to their geometry have very high strength to weight ratio are inherently rugged. Hundreds of these modular buildings on public school campuses have been subjected to strong earthquake ground shaking in the 1971 San Fernando, 1987 Whittier, 1989 Loma Prieta, 1993 Landers, and 1994 Northridge earthquakes. No structural damage to any of these buildings has been identified or reported.

Under the International Building Code, these buildings which have previously been classified as Ordinary Moment Frame systems can not be constructed in Seismic Design Categories D, E, or F. This would prohibit the continued use of these buildings throughout much of the State of California. This will impose an unnecessary economic burden on public school districts and others, without justification, given the satisfactory past performance of these buildings.

This proposal permits the continued use of these structures in California by establishing a new structural system that preserves the fabrication and erection procedures that have been successfully applied in the past. Design procedures are identical to those for other structural systems, except as needed to ensure that the systems meet the limitations necessary to ensure proper behavior.

The technical basis of this proposal is contained in a study and report titled *Structural/Seismic Assessment - Proposed Light Modular Steel Moment Frame System for Typical 2 Story Module*, dated January 27, 2006, and prepared by Simpson Gumpertz & Heger Inc. This report is available from DSA upon request.

Section 2212A.1 through 2212A.5 (Relocated from 2231A, CBC 2001): – These sections retain the requirements for testing of steel from Section 2231A of the 2001CBC. This change simply moves current standards, which are not addressed in model code to a new section of the code to be consistent with the IBC format.

The specific purpose and rationale for the amendments in 2007 CBC Chapters 23 provisions:

CHAPTER 23
WOOD

REPEAL OF EXISTING CALIFORNIA AMENDMENTS IN PART OR IN WHOLE THAT ARE NO LONGER NECESSARY:

The 2006 IBC uses reference standards for design and materials requirements with amendments rather than incorporating them into the building codes as was done in the 2001 CBC, which is based on the 1997 UBC. Since two code cycles (2000 & 2003) have passed between the 1997 UBC and the 2006 IBC, some of the design concepts and philosophies contained in the 2001 CBC have become obsolete or irrelevant. Repeal of California amendments for

those sections where the 2001 CBC design concepts or philosophies become obsolete or irrelevant are not addressed explicitly.

Amendments contained in the 2001 CBC are repealed except those shown in express terms. Where an entire amendment in a section or subsection is repealed they are shown as stricken through the section or subsection numbers. When amendments are carried forward the amended language are shown in the express terms and part of the text that is repealed are shown in strike-out. The first column of the adoption matrix shows which amendments are carried forward. The second column show where the amendment has been relocated to (by section). Any modifications to amendments being carried forward are indicated and purpose and rationale stated. Amendments that are relocated from existing Chapter 23 to a chapter other than Chapter 23 are shown in the relocated chapters.

Section 2301.1 – The scope is revised by adding Sections 2301.1.1, 2301.1.2 and 2301.1.3 to clarify application of Chapter 23 to DSA-SS regulated facilities. Since the total number of amendments in Chapter 23 are few, an amended Chapter 23A is not created (i.e. Chapter 23A in the 2001 CBC).

Section 2303.1.3.1 (Relocated from 2316A.2, CBC 2001) – This section retains the requirement for construction document to show detailed requirements for structural glue laminated timber from Section 2316A.2 of the 2001CBC. This amendment also clarify requirement per reference standards. This change simply moves current standard, which is not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 2303.4.1.2 (Exceptions) – This change is required to satisfy the requirements of California Code of Regulations (CCR), Title 24, Part 1, which requires that structural plans and specifications or reports be prepared and signed by a structural engineer.

Section 2303.4.1.3 (Exceptions) – This change is required to satisfy the requirements of California Code of Regulations (CCR), Title 24, Part 1, which require that structural plans and specifications or reports be prepared and signed by a structural engineer.

Section 2303.4.3 (Relocated from 2318A.7, CBC 2001) – This section retains the requirements for construction document to show details for wood trusses from Section 2318A.7 of the 2001CBC. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 2304.3.4 (Relocated from 2320A.6 and 2320A.11.9, CBC 2001) – This section retains the requirement for providing engineering analysis to justify design & details for sill plate from Sections 2320A.6 and 2320A.11.9 of the 2001CBC. The text is revised to match requirements with current deign practice. This change simply moves current standard, which is not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 2304.4.1(Relocated from 2320A.8 and 2320A.12.1, CBC 2001) – This section retains the requirements for providing engineering analysis to justify design & limitations on notches and bored holes in framing from Sections 2320A.8 and 2320A.12.1 of the 2001 CBC. The revisions to text are for clarifications only. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 2304.5 – This section refers to the International Mechanical Code for distance from source of fire to combustible framing. DSA will be proposing to replace the reference to the International Mechanical Code with the California Mechanical Code. The California Mechanical Code is proposed to be based upon the Uniform Mechanical Code, the amendment is necessary to ensure that the statutory code is properly referenced and to ensure changes to the Uniform Mechanical Code proposed by DSA-SS are applied and enforced. Without this amendment, the non-amended International Mechanical Code would apply.

Section 2304.9.1.1 (Relocated from 2318A.3.4, CBC 2001) – This section retains the requirement for coating fasteners from Section 2318A.3.4 of the 2001 CBC. This change simply moves current standard, which is not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 2304.11.2.2 (Exception, Relocated from 2306A.4, CBC 2001) – This section retains the requirement for minimum height of sill plate above slab at exposed exterior walls from Section 2306A.4 of the 2001 CBC. The text is revised to be consistent with current design practice. This change simply moves current standard, which is not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 2304.11.2.4.1 (Exception, Relocated from 2306A.4, CBC 2001) – This section retains the requirement for concrete curb around shower or toilet from Section 2306A.4 of the 2001CBC 2001. This change simply moves current standard, which is not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 2305.1.7 – Changes in this section are required to make SDPWS consistent with requirements of the 2008 CBC.

Section 2305.2.4.2 (Relocated from 2315A.3.3, CBC 2001): – This section retains the requirements for wood structural panel sheathing used for diaphragms and shear walls that are part of seismic force resisting system to be applied directly to framing members from Section 2315A.3.3 of the 2001CBC 2001. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

Table 2306.4.1 (Foot note m) – This amendment is required to ensure consistency with Section 2305.2.4.2.

Section 2306.4.5 (Relocated from 2513, CBC 2001): – This section retains the prohibition on use of lath, plaster or gypsum board from Section 2513 of the 2001CBC. This change simply moves current standard, which is not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 2308.2.8 (Relocated from 2320A.1, CBC 2001): – This section retains the requirement that engineering analysis be provided when using conventional light-frame construction from Section 2320A of the 2001CBC. This change simply moves current standard, which is not addressed by model code to a new section of the code to be consistent with the IBC format.

The specific purpose and rationale for the amendments in 2007 CBC Chapters 24 provisions:

CHAPTER 24
GLASS AND GLAZING

REPEAL OF EXISTING CALIFORNIA AMENDMENTS IN PART OR IN WHOLE THAT ARE NO LONGER NECESSARY:

The 2006 IBC uses reference standards for design and materials requirements with amendments rather than incorporating them into the building codes as was done in the 2001 CBC, which is based on the 1997 UBC. Since two code cycles (2000 & 2003) have passed between the 1997 UBC and the 2006 IBC, some of the design concepts and philosophies contained in the 2001 CBC have become obsolete or irrelevant. Repeal of California amendments for those sections where the 2001 CBC design concepts or philosophies become obsolete or irrelevant are not addressed explicitly.

Amendments contained in the 2001 CBC are repealed except those shown in express terms. Where an entire amendment in a section or subsection is repealed they are shown as stricken through the section or subsection numbers. When amendments are carried forward the amended language are shown in the express terms and part of the text that is repealed are shown in strike-out. The first column of the adoption matrix shows which amendments are carried forward. The second column show where the amendment has been relocated to (by section). Any modification to amendments being carried forward are indicated and purpose and rationale stated. Amendments that are relocated from existing Chapter 24 to a chapter other than Chapter 24 are shown in the relocated chapters.

Section 2403.1.1 (Relocated from 2402a, CBC 2001) – This section retains the requirements for labeling safety glass in hazardous locations from Section 2402a of the 2001CBC. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 2403.2.1 (Relocated from 2404.1a, CBC 2001) – This section retains the requirement for minimum laps and edge clearance for glass from Section 2404.1.a of the 2001CBC 2001. Part of the text is original 1997 UBC language carried forward as an amendment. This change simply moves current standard, which is not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 2403.6 (Relocated from 2403, CBC 2001) – This section retains the requirement for glazing materials from Section 2403 of the 2001 CBC. This change simply moves current standard, which is not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 2406.1.5 (Relocated from 2406.1, CBC 2001): – This section retains the requirement for glazing subjected to human impact in specific hazardous locations from Section 2406.1 of the 2001 CBC. This change simply moves current standard, which is not addressed by model code to a new section of the code to be consistent with the IBC format.

The specific purpose and rationale for the amendments in the 2007 CBC Chapter 25 provisions:

CHAPTER 25
GYPSUM BOARD AND PLASTER

REPEAL OF EXISTING CALIFORNIA AMENDMENTS IN PART OR IN WHOLE THAT ARE NO LONGER NECESSARY:

The 2006 IBC uses reference standards for design and materials requirements with amendments rather than incorporating them into the building codes as was done in the 2001 CBC, which is based on the 1997 UBC. Since two code cycles (2000 & 2003) have passed between the 1997 UBC and the 2006 IBC, some of the design concepts and philosophies contained in the 2001 CBC have become obsolete or irrelevant. Repeal of California amendments for those sections where the 2001 CBC design concepts or philosophies become obsolete or irrelevant are not addressed explicitly.

Amendments contained in the 2001 CBC are repealed except those shown in express terms. Where an entire amendment in a section or subsection is repealed they are shown as stricken through the section or subsection numbers. When amendments are carried forward the amended language are shown in the express terms and part of the text that is repealed are shown in strike-out. The first column of the adoption matrix shows which amendments are carried forward. The second column show where the amendment has been relocated to (by section). Any modification to amendments being carried forward are indicated and purpose and rationale stated. Amendments that are relocated from existing Chapter 25 to a chapter other than Chapter 25 are shown in the relocated chapters.

Section 2501.2 (Relocated from 2501A.1, CBC 2001) – This section retains the details of expanded scope of the chapter covering walls and ceilings from Section 2501A.1 of the 2001 CBC. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 2503.1 – The section reference is revised to accommodate relocation of Chapter 1 of the 2006 IBC to Appendix as Chapter 1 for the 2008 CBC.
Section 2503.2 (Relocated from 2501A.2, / 2501A,3, CBC 2001) – This section retains the requirements for keeping lath or gypsum wall boards to be accessible for inspection by inspector of record / special inspector and giving enforcement agency authority to require testing when appropriate from Sections 2501A.2 and 2501A.3 of the 2001CBC 2001. Part of the text is original UBC language carried forward as an amendment. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 2504.2 (Relocated from 2503A.1 / 2504A.1,CBC 2001) – This section retains the requirement for designing vertical and horizontal assemblies of gypsum board, lath and plaster per relevant chapters of CBC from Section 2503A.1 and 2504A.1 of the 2001CBC. Part of the text is 1997 UBC language carried forward. This change simply moves current standard, which is not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 2504.2.1 (Relocated from 2504A.2, CBC 2001) – This section retains the requirement for wood furring strip connections from Section 2504A.2 of the 2001CBC 2001. This change simply moves current standard, which is not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 2505.3 (Relocated from 2513A, CBC 2001) – This section retains the prohibition on use of gypsum board, lath and plaster over wood or light steel framing as shear wall from Section 2513A of the 2001CBC 2001. This

change simply moves current standard, which is not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 2506.2.1.1 – This section refers to Section 1614A for modifications to ASCE 7 requirements for acoustical and lay-in panel ceilings.

Section 2507.3 (Relocated from 2505A.3 and 2506A.5, CBC 2001): – This section retains the requirements for lath attached to horizontal wood support from Sections 2505A.3 and 2506A.5 of the 2001CBC. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 2508.5.6 – The requirements for designing connection between gypsum board diaphragm and vertical lateral load resisting system is added for safe design.

Section 2510.7.1 (Relocated from 2508A.8, CBC 2001): – This section retains the requirement for cement plaster boding agent standard for preparation of masonry or concrete surfaces from Section 2508A.8 of the 2001 CBC. This change simply moves current standard, which is not addressed by model code to a new section of the code to be consistent with the IBC format.

The specific purpose and rationale for the amendments in 2007 CBC Chapters 33 provisions:

CHAPTER 33
SAFEGUARDS DURING CONSTRUCTION

REPEAL OF EXISTING CALIFORNIA AMENDMENTS IN PART OR IN WHOLE THAT ARE NO LONGER NECESSARY:

The 2006 IBC uses reference standards for design and materials requirements with amendments rather than incorporating them into the building codes as was done in the 2001 CBC, which is based on the 1997 UBC. Since two code cycles (2000 & 2003) have passed between the 1997 UBC and the 2006 IBC, some of the design concepts and philosophies contained in the 2001 CBC have become obsolete or irrelevant. Repeal of California amendments for those sections where the 2001 CBC design concepts or philosophies become obsolete or irrelevant are not addressed explicitly.

Amendments contained in the 2001 CBC are repealed except those shown in express terms. Where an entire amendment in a section or subsection is repealed they are shown as stricken through the section or subsection numbers. When amendments are carried forward the amended language are shown in the express terms and part of the text that is repealed are shown in strike-out. The first column of the adoption matrix shows which amendments are carried forward. The second column show where the amendment has been relocated to (by section). Any modification to amendments being carried forward are indicated and purpose and rationale stated. Amendments that are relocated from existing Chapter 33 to a chapter other than Chapter 33 are shown in the relocated chapters.

Section 3305.1 – This section refers to the International Plumbing Code for sanitary facilities provided during construction. DSA-SS is proposing to replace the reference to the International Plumbing Code with the California Plumbing Code. The California Plumbing Code is proposed to be based upon the Uniform Plumbing Code, the amendment is necessary to ensure that the statutory code is properly referenced and to ensure changes to the Uniform Plumbing Code proposed by DSA-SS are applied and enforced. Without this amendment, the non-amended International Plumbing Code would apply.

Section 3307.2 (Relocated from 3301.2a, CBC 2001) – This section retains the requirements for protection of adjacent property from Section 3301.2a of the 2001 CBC. Part of the text is original 1997 UBC language carried forward as an amendment. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

Section 3307.3 (Relocated from 3301.3, CBC 2001) – This section retains the requirements for protection of existing buildings from Section 3301.3 of the 2001 CBC 2001. This change simply moves current standards, which are not addressed by model code to a new section of the code to be consistent with the IBC format.

The specific purpose and rationale for the amendments in 2007 CBC Chapters 34 provisions:

CHAPTER 34
EXISTING STRUCTURES

REPEAL OF EXISTING CALIFORNIA AMENDMENTS IN PART OR IN WHOLE THAT ARE NO LONGER NECESSARY:

The 2006 IBC uses reference standards for design and materials requirements with amendments rather than incorporating them into the building codes as was done in the 2001 CBC, which is based on the 1997 UBC. Since two code cycles (2000 & 2003) have passed between the 1997 UBC and the 2006 IBC, some of the design concepts and philosophies contained in the 2001 CBC have become obsolete or irrelevant. Repeal of California amendments for those sections where the 2001 CBC design concepts or philosophies become obsolete or irrelevant are not addressed explicitly.

NOTE: DSA-SS does not have any amendments in Chapter 34 of the 2001 CBC, so no repeals are noted.

Seismic retrofit standards for school buildings are currently located within Division VI-R of Chapter 16A, California Building Code, 2001 edition (Title 24, Part 2). This rulemaking action proposes to streamline and update these standards, and to relocate them into Chapter 34 (Existing Buildings) of the 2007 California Building Code. The proposed streamlining and updating of the regulations has been accomplished through replacement of prescriptive provisions with comprehensive use by reference of the Federal Emergency Management Agency's FEMA 356 *Prestandard and Commentary for the Seismic Rehabilitation of Buildings*.

This process was a collaboration between the Department of General Services (DGS), the Division of the State Architect (DSA), the California State University (CSU), the University of California (UC), the Administrative Office of the Courts (AOC), the Seismic Safety Commission (SSC), and the staff of the Building Standards Commission. The principal authors of the predecessor retrofit standards (Division III-R) and its subsequent modifications, and the CSU Seismic Review Board were included in this collaborative effort.

The express terms (proposed code change text) have been streamlined through coordination with DSA's proposed code changes to Division VI-R provisions used for state-owned buildings. *Sections 3415* through *3420* are proposed to be adopted by the BSC and DSA for application to state-owned buildings, and by DSA-SS for application to public schools. DSA-SS has proposed supplemental requirements in *Section 3421*, for application to public schools.

These seismic retrofit amendments provide technical requirements for the structural modification of existing state owned buildings, including those of the University of California and the California State University. These amendments are continuations of requirements in force since the 1995 edition of the California Building Code. Incorporation of these provisions into the California Building Code for state and University of California buildings was required by SB 597 (1992) and AB 3113 (1990), which is contained in Health & Safety Code Section 16600.

The amendment does not conflict with or overlap other standards applicable to California construction.

The public interest requires these amendments if state-owned and operated buildings are to be seismically safe in the future. Without it, the prohibitive cost to obtain full compliance of existing buildings to new building standards will result in less seismic safety improvement of the existing stock of state buildings.

The amendments are evaluated as reasonable and not capricious. The amendments were developed by a committee formed from technical and administrative persons from the California State University, Division of the State Architect, California Department of General Services (Real Estate Services Division), University of California, Administrative Office of the Courts, the Seismic Safety Commission, and the Building Standards Commission staff.

By applying the seismic retrofit requirements of these amendments rather than the requirements of the model building code, the seismic design requirements for existing buildings are reduced by approximately 25%, with no significant reduction of the life-safety of the occupants should an earthquake occur, as compared to code requirements for new

buildings. Many jurisdictions in the state have used this approach for many years to ensure that the joint goals of better safety for existing buildings and economy are achieved.

The same basis standard has been in effect as part of the California Building Code since 1995. Without it, there are only two choices in the level of safety for a modified existing building: a) stay the same, or b) set equal to requirements for a new building. Experience has shown that when presented with such a stark difference (particularly regarding cost), the decision to do nothing is often the choice made. The proposed amendments provide a moderating element on cost, since the design levels are somewhat lower, and more importantly, historic building practices that would not be allowed under the "new building" provisions can be used where they are safe. With adoption of this amendment, it can be anticipated that many more existing hazardous building will be retrofitted to a life-safe level than would occur if it was not adopted. It can also be expected that under these amendments, buildings that are proposed for modifications that do not impact the structural system cannot be modified unless they are shown not to be dangerous, as would be permitted under the model code provisions.

These amendments have been widely reviewed during development by technical representatives of many state agencies and by individuals in private practice. The base regulations on which they were developed have been part of the California Building code for the past 10 years. The proposed regulations are evaluated as clear and objective.

The model building code Chapter 34 prescribes some structural requirements for existing buildings. The scope of the model code and referenced standards does not address specific aspects for construction within DSA's jurisdiction. The model code and referenced standards do not fulfill statutory performance objectives for buildings within DSA's jurisdiction. The model building code is limited in content regarding structural issues for existing buildings, and has almost no discussion of seismic performance issues for existing buildings. If it is the only section of the Code to apply to existing buildings, then in almost all cases any significant modification of the seismic safety of a building will require it to conform to the requirements for a new building. With this level of conformance, it will not be possible to use archaic structural elements that are not permitted under current provisions of the model building code. There are many past construction practices that are no longer allowed by code, but which yield buildings that are expected to provide life safety performance.

The proposed amendments are a successor to Division VI-R from the 2001 edition of the CBC. The significant difference is that when Division VI-R and its predecessors were adopted, there was no national standard for the seismic regulation of existing buildings. In the past few years, the Federal Emergency Management Agency has been supporting research efforts to develop such standards. Recently the American Society of civil Engineers (ASCE) has been working on an adaptation of FEMA 356, *Guidelines for* the *Seismic Retrofit of Existing Buildings*, to become a standard ASCE-41. FEMA 356 has been in print for the past six years. While it is not a consensus standard, FEMA 356 is used by many public and private organizations in applying the existing Division VI-R requirements of the California Building Code, and can be used under Method B. OSHPD has authorized its use for their buildings with some restrictions to buildings under their jurisdiction.

ASCE representatives indicate that approval of a standard is expected within the year, possibly sooner. Based on the advanced drafts of the document, and the general success of using FEMA 356, it is proposed that the existing Division VI-R requirements for existing state buildings be revised to make FEMA 356 the basis for the provisions. This was done by a committee formed from technical and administrative persons from the California State University, Division of the State Architect, General Services Department Real Estate Services Division, University of California, Administrative Office of the Courts, Seismic Safety Commission, and the Building Standards Commission, with assistance from professional engineers throughout the state. The draft ASCE-41 standard for the final ballot has been reviewed, and the outcome evaluated if the proposed modifications are completed. When ASCE-41is adopted, it will be reviewed and possibly the references to FEMA 356 will be replaced with references to ASCE-41.

Summary of Proposed Changes:

For the cases where the necessary CBC Division VI-R requirements are essentially unchanged for the added Sections 3415 to 3520, the rationale will be stated as "relocation from the related Section of the current 2001 CBC Division VI-R."

Need for an upgraded version of CBC Division VI-R: While the currently applicable CBC Division VI-R provides specific requirements for the evaluation and subsequent retrofit design of state owned buildings, the procedure for evaluation and design as given in the non-peer reviewed Method A requires upgrade and changes so as to provide the performance-based design procedures of FEMA 356 *Prestandard and Commentary for the Seismic Rehabilitation of Buildings*. This Prestandard allows the specification of defined performance levels, such as Life Safety or Collapse

Prevention at respective hazard levels of seismic ground motions. For each performance level, there are values of acceptance criteria for the inelastic deformation response of the various structural components of an existing building. Retrofitted components must have the strength level to comply with the acceptance criteria.

One of the primary objectives of this adoption for existing buildings is to provide an integrated code applicable for all authorities (DGS, UC, CSU, DSA for Public Schools) with minimum number of exceptions for any specific authority. In the process of review of the existing code. where particular exceptions by an authority were found to be acceptable by the other authorities, then the exception notation was removed and the text of the exception was incorporated as a generally applicable requirement. The resulting integrated code will result in a more efficient design and enforcement process for all participants.

Section 3401

3401.1.2. This amendment provides reference to Sections 3415 through 3420, for application to public schools.

SECTION 3415 - EARTHQUAKE EVALUATION AND DESIGN FOR RETROFIT OF EXISTING BUILDINGS
3415.1 Purpose.
To specify the authority and building occupancies subject to the requirements of Sections 3415 to 3420.

3415.2 Scope.
Relocated from 1640A.1. The exception provides reference to the voluntary retrofit Section 3415.11.

3415.3 Applicability.
Relocated from 1640A.2

3415.4 Evaluation required.
Relocated from 1640A.2.1

3415.5 Minimum seismic design performance levels for structural and nonstructural components.
Specifies the FEMA 356 Performance Criteria in terms of seismic ground motion at a given hazard and the related performance level for each authority and occupancy category.

3415.6 Retrofit required.
Relocated from 1640A2.2

3415.7
Relocated from 1640A.3, but with reference to the IBC Chapter 16.

3415.8
Relocated from 1640A.4, but with reference to FEMA 356 Chapter 9.

3415.9
Relocated from 1640A.5

3415.10
Relocated from 1640A.6

3415.11 Voluntary lateral-force resisting system modifications.
The purpose of these provisions is to allow partial voluntary seismic upgrades, subject to the minimum requirements of Section 3417.12. These provisions are intended to encourage seismic strengthening of the most vulnerable features of an existing building, while not requiring strengthening of all seismic load path elements and connections of buildings that otherwise are not subject to a required comprehensive retrofit.

SECTION 3416 - DEFINITIONS
Definitions are proposed to provide terms used for enforcement provisions, and for the FEMA 356 performance objectives as given in *Table 3415.5*, and related procedures. Definitions proposed to be repealed are no longer necessary with the repeal of *Section 1644A,* and replacement (by reference) of FEMA 356 provisions.

SECTION 3417 - SEISMIC CRITERIA SELECTION FOR EXISTING BUILDINGS

3417.1 Basis for Evaluation and Design.
Relocated from *1643A.1*, but with requirement for Building Official approval for Method B and replacement of FEMA 356 Standards. The **Exception** allows relatively new Buildings designed per the 1998 CBC to meet requirements of this section without evaluation.

3417.1.1 Specific procedures.
Relocated from 1643A.1.1, but with name change from “special” to “specific”.

3417.1.2
Added requirement for building official approval of peer reviewer and seismic criteria and evaluation procedures, to ensure quality and independence of peer review process.

3417.1.3
Unreinforced masonry infilled frames are common in older structures, and have been demonstrated in California earthquakes to be safe under specific conditions where they do not fail out-of-plane. This section allows the use of masonry infill for lateral load resistance according to procedures given in FEMA 356, Chapter 7. Out-of-plane stability verification is required for the prevention of falling hazard.

3417.2 Existing Conditions.
Relocated from 1643A.2. Added are the specific date collection requirements from FEMA 356 Section 2.2.

3417.3 Site Geology and Soil Characteristics
Relocated from 1643A.3 with reference to the model building code Chapter 18.

3417.4 Occupancy Categories.
Relocated from 1643A.4 with reference to model building code requirements related to occupancy.

3417.5 Configuration Requirements.
Relocated from 1643A.5 with reference to FEMA 356 definitions of irregularity.

3417.6 General Selection of Design Method.
Relocated from 1643A.6

3417.7 Prescriptive Selection of Design Method.
Relocated from 1643A.7

3417.8 Strength Requirements.
Relocated from 1643A.9 with **Exceptions** items 2. and 3. deleted

3417.9 Nonstructural Component Requirements.
Requirements are given for nonstructural components for performance level N-D or higher using FEMA 356 Chapter 11 which relates evaluation procedures to performance levels.

3417.10 Observation, Testing and Inspection.
Relocated from 1643A.12 with reference to model building code Chapter 17.

3417.11 Temporary Actions.
Relocated from 1643A.13 with reference to performance levels given in Section 3415.

3417.12 Voluntary lateral-force resisting system modifications.
Minimum requirements are given for voluntary modifications as permitted by Section 3415.11.

SECTION 3418 - METHOD A
3418.1 General.
FEMA 356 Upgrade for use of linear procedures for the performance based design as specified in Section 3415.5. **The Exception** allows use of FEMA 356 Simplified Rehabilitation Method for qualifying buildings, where there is professional opinion that the simplified procedures result in safe buildings as given in the Simplified procedure.

SECTION 3419 - METHOD B

3419.1

Relocated from 1648A.1 with addition requiring Building Official approval for a waiver of consideration of seismic performance.

3419.2

Relocated from 1648A.2

3419.2.1

Relocated from 1648A2.1, addition for approval of approach by Enforcement Agency to ensure approval by the responsible authority for the building. A definite statement is added to permit Method A if acceptable.
The conditions listed in 1648A2.1.1 to 1648A2.1.6 are repealed since similar items are included in FEMA 356.

3419.2.2

Relocated from 1648A.3, with changes in procedures to reflect current provisions.
FEMA 356 Chapter 2 is prescribed for code requirements unless exceptions are approved by Peer Reviewer and Building Official. This is to establish the essential concepts for evaluation and design.

3419.2.3

Relocated from 1648A.2.4, with additional approval required for seismic ground motion used in non-linear procedures.

3419.2.4

Relocated from 1648A.2.5, with addition for approval by Building Official to ensure final approval by the responsible authority for the building.

SECTION 3420 - PEER REVIEW REQUIREMENTS

3420.3.3

Relocated from 1649A3.3
Exception: to allow specific authorities to provide the peer review when qualified staff is available.

3420.3.4

Relocated from 1649A3.4, with addition to describe report items to be submitted to Building Official.

3420.4 Scope of Review

Relocated from 1649A.4 with addition to require changes during construction to be reported to reviewer.

3420.5 Reports

Relocated from 1649A.5 with requirement for report prior to submittal of plans for plan review. Building Official may waive requirement for report during a specific phase.

3420.6 Responses and Resolutions

Relocated from 1649A.6.

3420.7 Resolution of Conflicts

To assign the Enforcement Agency with authority to determine the resolution of conflicts.

SECTION 3421 - ADDITIONAL REQUIREMENTS FOR PUBLIC SCHOOLS

3421.1. Evaluation and Design Criteria Report.

To address specific administrative requirements for public schools, during review and approval of the criteria report.

3421.2 Rehabilitation Involving Only Portions of Structures.

To address specific cases where school districts are considering the aquisition of a portion of a building, which is not uncommon in urban regions.

The specific purpose and rationale for the amendments in 2007 CBC Chapters 35 provisions:

CHAPTER 35
REFERENCED STANDARDS

REPEAL OF EXISTING CALIFORNIA AMENDMENTS IN PART OR IN WHOLE THAT ARE NO LONGER NECESSARY:

The 2006 IBC uses reference standard for design and materials requirements with amendments rather than incorporating them into the building codes as was done in the 2001CBC, which is based on the 1997 UBC. Since two code cycles (2000 & 2003) have passed between the 2001 CBC and the 2006 IBC, some of the design concepts and philosophies contained in the 2001 CBC have become obsolete or irrelevant. Repeal of California amendments for those sections where the 2001 CBC design concepts or philosophies become obsolete or irrelevant are not addressed explicitly.

All amendments contained in the 2001 CBC Chapter 35 are repealed.

Chapter 35 – Proper references are added for amendments to International Building Code for adoption as the 2007 CBC.

The specific purpose and rationale for the amendments in 2007 CBC Appendix J provisions:

APPENDIX J
GRADING

REPEAL OF EXISTING CALIFORNIA AMENDMENTS IN PART OR IN WHOLE THAT ARE NO LONGER NECESSARY:

The 2006 IBC uses reference standards for design and materials requirements with amendments rather than incorporating them into the building codes as was done in the 2001 CBC, which is based on the 1997 UBC. Since two code cycles (2000 & 2003) have passed between the 1997 UBC and the 2006 IBC, some of the design concepts and philosophies contained in the 2001 CBC have become obsolete or irrelevant. Repeal of California amendments for those sections where the 2001 CBC design concepts or philosophies become obsolete or irrelevant are not addressed explicitly.

DSA-SS does not currently have amendments contained in the 2001 CBC Appendix Chapter 33 (grading), so no repeals are noted.

Section J105.2 – The section reference is revised to accommodate relocation of Chapter 1 of the 2006 IBC 2006 to Appendix as Chapter 1 for the 2008 CBC.

Section J107.5 – The requirements of this section is clarified to avoid conflict with requirements in Chapters 18A.

TECHNICAL, THEORETICAL, AND EMPIRICAL STUDY, REPORT, OR SIMILAR DOCUMENTS:

(Government Code Section 11346.2(b) (2) requires an identification of each technical, theoretical, and empirical study, report, or similar document, if any, upon which the agency relies in proposing the regulation(s).)

International Building Code, 2006
Minimum Design Loads for Buildings and Other Structures, ASCE 7-05
Flood Resistant Design and Construction ASCE 24-05
Building Code Requirements for Structural Concrete, ACI 318-05
Guide to Shotcrete, ACI 506-05
PCI Design Handbook, 6th Edition, PCI 120-04
Aluminum Design Manual, 2005
Building Code Requirements for Masonry Structures, ACI 530-05

Specification for Masonry Structures, ACI 530.1-05
Specification for Structural Steel Buildings, AISC 360-05
Seismic Provisions for Structural Steel Buildings, AISC 341-05.
North American Specification for the Design of Cold Formed Structural Members, AISI 2001 with 2004 Supplements
National Design Specification with Supplement, NDS-05
Special Design Provisions for Wind and Seismic, SDPWS-05
Guidelines for Seismic Restraint for Direct Hung Suspended Ceiling Assemblies, Seismic Zone 3-4, CISCA -2004
Prestandard and Commentary for the Seismic Rehabilitation of Buildings, FEMA – 356-2000
Structural/Seismic Assessment - Proposed Light Modular Steel Moment Frame System for Typical 2 Story Module, dated January 27, 2006, prepared by Simpson Gumpertz & Heger Inc.

CONSIDERATION OF REASONALBLE ALTERNATIVES

(Government Code Section 11346.2(b) (3) (A) requires a description of reasonable alternatives to the regulation and the agency's reason for rejecting those alternatives. In the case of a regulation that would mandate the use of specific technologies or equipment or prescribe specific action or procedures, the imposition of performance standards shall be considered as an alternate)

The alternative to these proposed regulations would be to leave regulations as they are. This alternative was rejected, since it would leave design requirements that are outdated from the current national standards.

REASONABLE ALTERNATIVES THE AGENCY HAS IDENTIFIED THAT WOULD LESSEN ANY ADVERSE IMPACT ON SMALL BUSINESS.

(Government Code Section 11346.2(b) (3) (B) requires a description of any reasonable alternatives that have been identified or that have otherwise been identified and brought to the attention of the agency that would lessen any adverse impact on small business. Include facts, evidence, documents, testimony, or other evidence upon which the agency relies to support an initial determination that the action will not have a significant adverse impact on business.)

There will be no overall adverse cost impact on small business.

FACTS, EVIDENCE, DOCUMENTS, TESTIMONY, OR OTHER EVIDENCE OF NO SIGNIFICANT ADVERSE IMPACT ON BUSINESS.

(Government Code Section 11346.2(B)(4) requires the facts, evidence, documents, testimony, or other evidence on which the agency relies in to support an initial determination that the action will not have a significant adverse economic impact on business)

The regulations proposed will have no overall cost impact on business:

1) In most areas of California, seismic base shear will be less than what was under the 2001 CBC except in areas close to known active earthquake faults, where base shear will be more or less equal. Since Seismic Design Category is dependent on spectral acceleration, soil type and occupancy category, individual sites can take advantage of all three factors instead of relying on seismic zones as in the 2001 CBC.
2) Component design forces will be smaller at higher elevations because of reduction in rate of increase of spectral acceleration with height provided in ASCE 7 Chapter 13. This change along with reduction in base shear can reduce component design forces significantly.
3) Non-Building structures are permitted to be non-ductile and non-redundant when designed for higher base shear. This may reduce the detailing cost in some circumstances.
4) Construction detailing requirements in materials standards will be more or less equivalent to the 2001 CBC requirements.
5) Inspection and testing requirements in the new code will be some what more stringent than what was in the 2001CBC.
6) Construction documentation requirements are clearly spelled out, this will add to the efforts in design document preparation in some cases.

DUPLICATION OR CONFLICTS WITH FEDERAL REGULATIONS

(Government Code Section 113465.2(b)(5) requires a department, board, or commission within the Environmental Protection Agency, the Resources Agency, or the Office of the State Fire Marshal tot describe its efforts, in connection with a proposed rulemaking action, to avoid unnecessary duplication or conflicts with federal regulations contained in the Code of Federal Regulations addressing the same issues. These agencies may adopt regulations different from these federal regulations upon a finding of one or more of the following justifications: (A) The differing state regulations are authorized by law and/or (B) The cost of differing state regulations is justified by the benefit to human health, public safety, public welfare, or the environment. It is not the intent of this paragraph to require the agency to artificially construct alternatives or to justify why it has not identified alternatives)

These regulations do not duplicate or conflict with Federal Regulations.